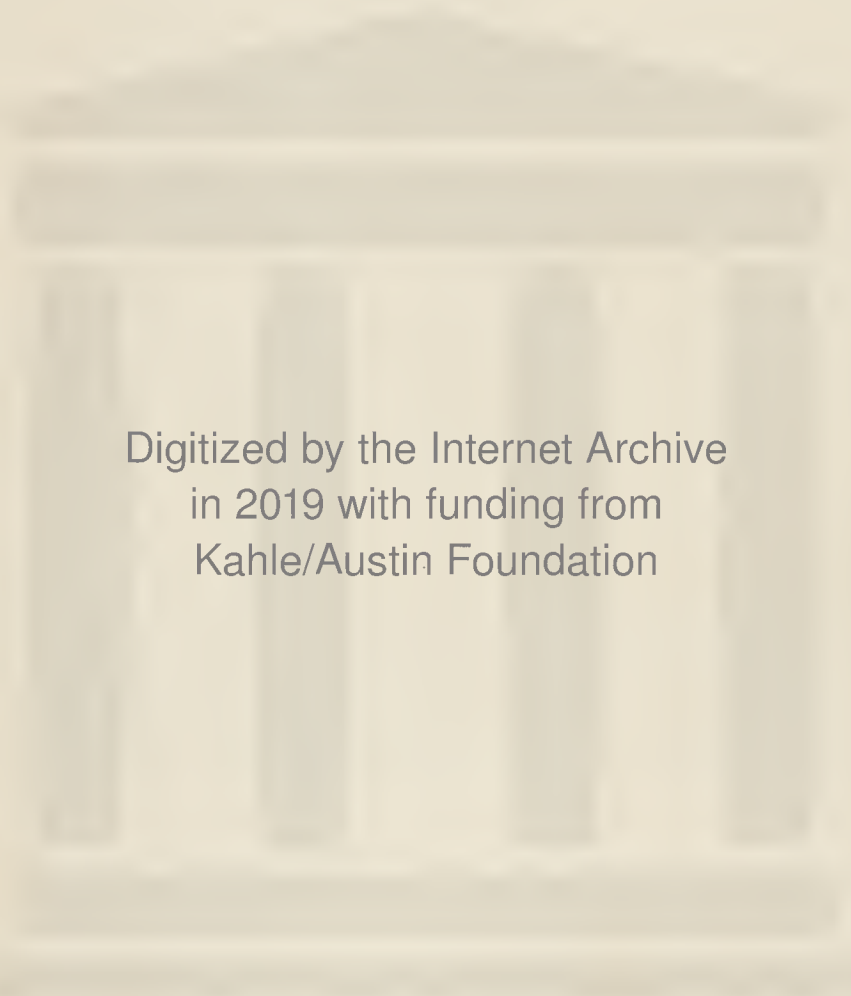


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NORTHWEST COAST INDIAN ART

LEAFLET No. 1

FEBRUARY, 1930

2nd Printing of 2nd Edition, December, 1937.

Reprinted July 1967

NORTHWEST COAST INDIANS

1. INTRODUCTORY. The first edition of this leaflet covered the area from the Chinook in the south to the Eskimo in the north. In this edition these extremes are not considered, not being truly members of the Northwest Coast group. The past tense is used because most of the culture described has gone. Space does not permit mention of which features of it still exist.

2. TRIBES AND LOCATIONS. Starting at the Canada-United States border on the Pacific coast the Northwest Coast tribes run north in the following order: a number of small tribes of the Salishan stock called by the general name Salish; *Makah, Nootka and Kwakiutl, Wakashan stock; Bella Coola, Salishan stock; Haida—on the Queen Charlotte Islands—Skit-tagetan stock; a group of tribes of the Tsimshian stock; Tlinkit, Koluschan stock.

3. POPULATION. When first explored by Europeans the population was from 50,000 to 60,000. During the 19th century it rapidly decreased. Now the tribes number about 19,000 and appear to be increasing somewhat, except the Bella Coola. For details about population, see Leaflet 72.

4. HABITAT. The tribes inhabited the narrow beaches along the sea coast and banks of the large rivers at the foot of the towering mountain ranges on the mainland and the many islands off shore. The country was covered with great forests of immense trees, which flourished in the rather mild, rainy climate.

5. CONTACT WITH WHITES apparently began with the visits of the Russian, Bering, in 1741 and the Spanish under Perez in 1774. Spanish, English and French traders and explorers soon followed. The Americans came in the early 19th century. The fur trade, especially in sea otter, was the chief cause for these contacts. White influence had a disastrous effect on the Indians, vice and disease rapidly reducing the population. The native civilization tended to break down. On the other hand certain missionary and governmental agencies have done much good.

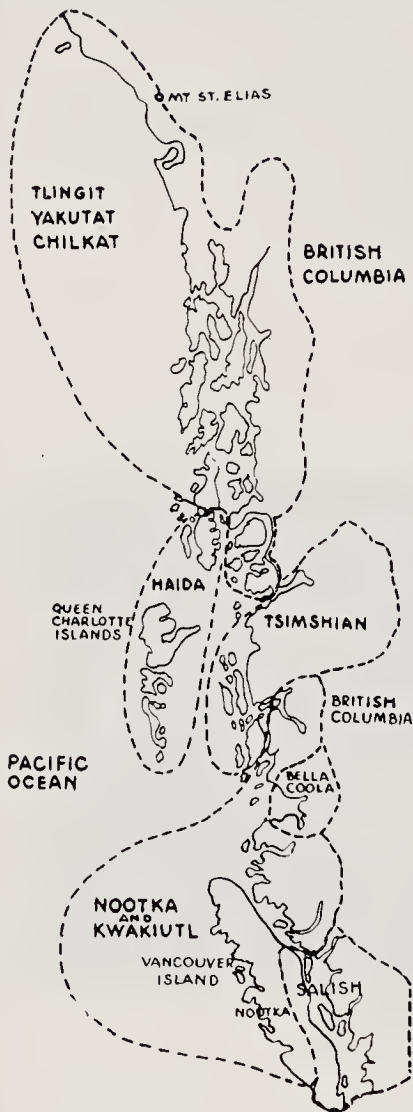
6. PHYSIQUE. In general these tribes are of relatively short stature and heavy build, with round heads and broad faces. For Indians they have an unusual amount of facial hair. There were two types of artificial head deformation. The Salish flattened the forehead. The Kwakiutl bound the head so that it assumed a long, conical shape.

7. HOUSES AND VILLAGES. Large houses, often containing several families, built of large, heavy hand hewn planks and beams and often having carved or painted fronts were grouped in the winter villages. The houses were oblong or

square, had a short side facing the water, and gable roofs. In the summer the people lived in small, temporary camps as they traveled about on food gathering expeditions.

8. CLOTHING AND ORNAMENT. Men wore only blankets or robes of shredded cedar bark, fur, or woven wool. Breech cloths were not used. Women wore only aprons of shredded cedar bark in good weather, adding blankets or short capes during cold or storm. Blankets of cedar bark were the most common. Moccasins were very uncommon, barefeet being the rule. Broad brimmed, conical hats of cedar bark were worn. The women tied tight bands around the ankles. Skin shirts, leggings, and boots were used to some extent by the far northern tribes. For ceremonial dress cape-blankets—the so-called Chilkat blanket—shirts and leggings of mountain goat wool were used, especially in the north. Chiefs wore elaborate headdresses of carved wood, trimmed with shell, sea lion whiskers and ermine. Today ordinary commercial clothing is largely used. The men wore ear and nose pendants of wood, feathers, shell and metal. They oiled their bodies and sprinkled them with red ochre, mica and shiny sand. White bird down was scattered over the hair. The women of the northern tribes slit the lower lip and inserted a piece of wood called a labret. The Haida practiced elaborate tattooing.

*The Makah are part of the Nootka and live on Cape Flattery, Washington, which is not shown on the map.



9. FOOD was obtained largely from the sea and the large rivers. Salmon, cod, halibut and olachen were taken with hooks, nets, spears and traps. Porpoise, seal and whale were captured by harpooning, the whale only by the Nootka. Herring spawn, olachen oil and shell fish were important foods. Very few land animals were eaten. Birds and eggs were favorite foods. Vegetal food was supplied by berries, roots and sea weed. There was no agriculture. Much food of all kinds was dried or otherwise preserved for winter use. There was always an abundance of food.

Food was cooked by roasting or broiling and by boiling in wooden boxes and water-tight baskets by dropping in red hot stones.

10. BASKETRY. Among the Tlinkit and Haida baskets, largely pail-shaped, were made by plain twining of split spruce roots and decorated by false embroidery with colored grasses. The southern tribes made baskets of cedar bark in plain and fancy checker weaves. Twined openwork carrying baskets were also made in the south. The southern baskets had squarish deep shapes. Mats of cedar bark in checker weaves were very common everywhere. For further details about basketry, see Leaflets 58, 67 and 68.

11. WEAVING. The Salish tribes made blankets of mountain goat wool, the hair of a special breed of dog, feathers, or fireweed cotton, the first material being by far the most common. There were two types, a coarse white goat wool blanket in a checker weave for ordinary use and a much finer type with elaborate colored patterns made in various twined weaves for the use of the nobles. Both were made on a vertical loom with horizontal top and bottom roller bars. See Leaflet 59-60.

The northern tribes, especially the Chilkat division of the Tlinkit, made blankets, shirts, aprons and leggings of goat wool. They had animal designs of the characteristic Northwest Coast type executed in black, green, yellow and white. A blanket is shown on the cover. They are made on a simple upright weaving frame, with loose warps of mixed wool and cedar bark, in various twined technics.

12. DYES for wool: black, hemlock bark; green, copper; yellow, wolf moss, *Evernia vulpina*. Dyes for basketry: black, soaking in mud, salt water boiled with hemlock bark; purple, two shades from two kinds of huckleberry, *Vaccinium membranaceum* and *Vaccinium ovalifolium*; red, alder bark and wood, *Alnus Oregona*, nettle, *Urtica Lyallii*, and hemlock bark, *Tsuga heterophylla*; yellow, wolf moss, *Evernia vulpina*; greenish-blue, hemlock bark and copper oxide. Aniline dyes were introduced toward the end of the 19th century and have largely replaced the native dyes. See Leaflet 71.

13. CARVING in wood was the outstanding art of the region, especially in the north. Stone and jade tools were used before the introduction of metal by Europeans in the late 18th century. Spoons, boxes, chests and dishes of all sizes, weapons and tools, rattles, ceremonial paraphernalia and masks, canoes, and totem poles were the principal objects carved from wood. Many of these articles were painted. Numerous small objects were carved from bone, horn, shell and stone in human, animal and eccentric forms. Mask making reached great heights. There were hundreds of different kinds, mostly elaborately carved and painted. For additional details about masks, see Leaflet 65-66.

Much skill was shown in forming all four sides of boxes from single planks. The plank was cut partially through in three places and bent into a square after steaming. The ends were sewn together and the whole attached to the bottom by spruce root stitches sunk in grooves or passing through holes.

14. METALWORK. Copper, either native or imported, was used to a considerable extent. Large shield-like objects, called "coppers," were the chief product of this industry. They were symbols of wealth and in trading and gift-giving often attained tremendous values. Copper was also used for decorating iron knives and for rattles and personal ornaments. Brass and iron wire were twisted into bracelets. Sheet silver bracelets, carved with totemic designs, were made.

†**15. TOTEM POLES** reached their greatest development in the mid-19th century. The carvings on them represent two things: life forms which are the heraldic crests of the owner's family; or illustrations of mythological adventures. Large carved monuments are also raised in memory of the dead. Originally the totem poles were attached to the fronts of houses, but later were moved to a position before the dwellings. There were differences in size and decoration among the various tribes. Totem poles had nothing to do with religion.

16. DESIGN STYLE. All designs in this region, except those on basketry, were based on bird, animal and fish forms and were largely curvilinear, asymmetric curves being the rule. In order to depict all sides of an animal on a flat surface a system of dissection was invented, by which highly conventionalized drawings of parts of animal bodies were spread out in symmetrical arrangements. The blanket on the cover illustrates the style. Basket designs were angular geometrical abstractions.

17. TRAVEL was almost entirely by water so canoe building reached a very high level. There were two types used respectively in the north and south. Both were dug out of single logs, though the upper portions of bows and sterns were sometimes separate pieces.

†For additional details see Leaflet 79-80.

The largest canoes were sometimes 60 to 80 feet long and were capable of long ocean voyages. Sails were used to some extent.

18. WARFARE for revenge and slave raiding was common. Forts were built to defend towns against raiders. The use of armor made of thick hides or of wooden slats was a peculiar feature of this culture. The chief weapons were knives and clubs, though spears and bow and arrow were also used.

19. GAMES. The most popular game involved the guessing by a person or side of the location of a marked stick concealed by the opponent. The guessing was based on the expression of the opponent's face. Dice games, shooting at a mark and quoits were other games. Cat's cradles were made. Gambling was common and heavy.

20. CUSTOMS. Wealth and pride of family were the two strongest influences in this society. There were three classes of society, nobles, commoners and slaves, and family groups of many persons believed to be descended from a common ancestor. The heads of the most important families in a village or area were ruling chiefs. In the north the tribes were divided into two or four groups, members of any one of which must marry into another group. In the north descent was through the mother, and in the south either through the father or through both sides. Marriages were arranged by the parents and accompanied by gift giving. In the north the dead were burned, while the southern tribes laid their dead in trees or on high platforms, a canoe often being the coffin. Slavery was very common. The potlatch, or gift giving ceremony, was universal. At these feasts the host would give away nearly everything he possessed, thus gaining great prestige. An elaborate system of borrowing and interest paying existed. Hospitality was stressed.

21. RELIGION. Various rather vague, faraway gods were believed to exist, but received little attention. The active religious beliefs and actions of the tribes had to do with the idea that all animals, birds, fishes—especially the larger ones—and even inanimate objects in nature, such as rocks and trees, were powerful and immortal beings, almost divine spirits, who must be propitiated and controlled by various ceremonial practices and the use of offerings and taboos. The more important religious practices were under the management of shamans, or medicine-men, who also had powers as doctors and magicians. But individuals conducted their own private religious rites also. There was a belief in the soul and its future life in various rather uninviting heavens.

The most striking religious practices were the great dramatic ceremonies and spectacles conducted in special large buildings during the winter months. A large number of masked figures, believed to be temporarily occupied by spirits, acted out various myths to the accompaniment of singing and the noise of drums, rattles and large wooden whistles. These ceremonies were usually conducted by secret societies, especially in the south. The initiation of neophytes was the chief activity in the dances.

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PLAINS INDIAN BEAD AND BUCKSKIN

LEAFLET No. 2—1930

2nd Edition

AUGUST, 1936

Reprinted July 1967

North American Plains Indians
Hide Dressing and Bead Sewing Techniques

THE PLAINS INDIANS may be defined as the members of those tribes which ranged between the Rockies and the Missouri river from northern Texas to southern Saskatchewan and Manitoba.

KINDS OF SKINS USED. While the Indians utilized the skins of all animals killed by them, the following varieties provided most of the materials for their garments and other hide objects made by them: Buffalo, deer, elk, moose, antelope, beaver, bear, mountain lion, wolf, coyote, badger and ermine.

ARTICLES MADE FROM SKINS. The thick, heavy hides of buffalo, elk and deer were used to make tepees, women's dresses, saddles and saddle covers, and robes of soft dressed hide; war shields and moccasin soles of rawhide.

The medium weight hides were used for girls' dresses, men's shirts, knee and hip length leggings, quivers, rifle scabbards, pipe bags, capes and papoose carriers.

Hides of small animals were made into medicine, tobacco and other small pouches, bags and sheaths. Moccasins and dolls were made from remnants of every sort of skin. The skins of animal heads and paws were made into medicine bags.

METHOD OF SKIN DRESSING. The following method of skin dressing was almost universal among the Plains tribes. There were local variations in the ingredients of the braining mixture, the shape and materials of the tools, and the amount of labor expended. Skin dressing was performed by the women.

First the wet hide was staked out on the ground, hair side down, and the flesh, fat, coagulated blood and fragments of tissue scraped off with a toothed gouge or fleshing tool of bone or iron. Second, the hair was removed and the skin reduced to a uniform thickness by scraping, each side being worked over in turn with an adze-like tool. If rawhide was desired, nothing further was done to the hide. If soft, flexible skin was needed, a third step was taken. A mixture of brains and anyone or several of the following materials, cooked ground-up liver, fats and greases of various kinds, meat broth, and various vegetable products, was thoroughly rubbed into the hide. When well saturated with this compound, it was allowed to dry, then soaked in warm water and rolled up into a tight bundle. The final step was the stretching of the hide, as the braining process caused great shrinkage. The hide was alternately soaked in warm water and pulled with hands and feet, pulled down over a rounded post, or stretched by two persons if the hide was large. Friction caused by rapidly pulling through a small opening was also resorted to to give greater softness. The dressing process was complete when the hide was nearly its original size and thoroughly softened and smoothed.

Fur robes were dressed in the same manner, except, naturally, that the hair was not scraped off. War shields of unusual thickness and hardness were made of sections of raw buffalo hide by alternately soaking and drying them out over a slow, smoky fire, the heat causing them to shrink and thicken. When finished they were from one-quarter to one-half an inch in thickness.

METHODS OF TAILORING. The skins were cut without pattern or measurement to suit each individual requirement. In cutting every effort was made to prevent waste. Remnants were cut into moccasins, pouches, fringes, etc. These fringes were sewed on coats, shirts, dresses, moccasins and bags. Fringes were also cut directly on finished articles. Sewing was done with bone awls and sinew made from the tendons of the larger animals. Sometimes vegetable fibres were used. The awls were not threaded, having no eyes, but were used to punch holes and to poke the sinew through these holes. In recent times steel awls have replaced those of bone and thread is used in place of sinew.

PREPARATION OF SINEW. The tendon was removed from the body as intact as possible and thoroughly dried. When desired for use it was soaked till free from all natural glue. It was then gently pounded until the fibres were completely separated. Each fibre was twisted into a thread.

HIDE DECORATION. The majority of the articles so made from hides were decorated in some way by the Indians. Painting and embroidering with beads or porcupine quills were the commonest methods of applying decorations. The coming of the white man with his endless supply of manufactured beads gave an immense impetus to an art which the Indians had long practised to some extent with quills and beads of their own manufacture.

BEADS. China or glass beads are all of European origin. Venice has always been the chief source of beads and until comparatively recent times nearly all beads came from there. In fairly recent years they have also been imported from Czecho-Slovakia, France, Germany and Japan. The various kinds of native made beads are listed in the following paragraph. Bead embroidery began in the East about 1750 and in the West about 1800. Its main development has been since 1850.

The small, round, so-called seed beads used in most sewed bead work are made in three sizes from porcelain, glass, cut steel and silver and gilt glass. The last three types are very modern. Larger beads were used for necklaces, and to decorate fringe ends. Brass French trader beads of fairly large size were introduced by the Hudson Bay Company and universally used. Inch long tubular glass beads were extensively used for necklaces and for decorating dresses. Cylindrical bone beads, called pipe bones, ranged in length from one to four inches and were used in necklaces and breastplates. They were originally made from the small bones of the front legs of deer or from turkey legs, but in the last twenty-five years they have been made by machinery by the whites. Articles which are not properly beads but which are very similar in their manner of usage include dentalia shells, the teeth and claws of many wild animals, dried berries and fruit pits, colored and sometimes polished. In recent years buffalo, horse and cattle teeth, have supplanted those of elk, deer and wolf.

METHODS OF USING BEADS. Beads were worked into designs in two ways: by weaving on a small hand loom and by sewing directly

on to the dressed skin. The latter method is the one ordinarily employed by the Plains Indians. Two varieties of stitch are in common use: (1) Overlaid or spot stitch. The beads are threaded on a piece of sinew. This is sewn to the skin or cloth with a second piece of sinew, passing over the first string between every second or third bead. If the sewing is on skin the second string does not pass completely through the material, but runs just under the surface. On cloth the stitch goes entirely through. (2) Lazy stitch. The sinew is poked through a perforation just under the surface of the skin, but not through it, and the required number of beads is threaded on. The sinew is then passed under the surface by the last bead through a semi-circular perforation which leads it to the surface just above the first row of beads and facing the starting point of the sewing. This zig-zag course is repeated as often as is necessary, each row having the same number of beads. The overlaid stitch produces a smooth mosaic like surface with all the beads fastened down. The lazy stitch gives a pattern arranged in bands, made up of rows of beads sewed down only at the ends. In both cases no stitching appears on the under surface of the skin.

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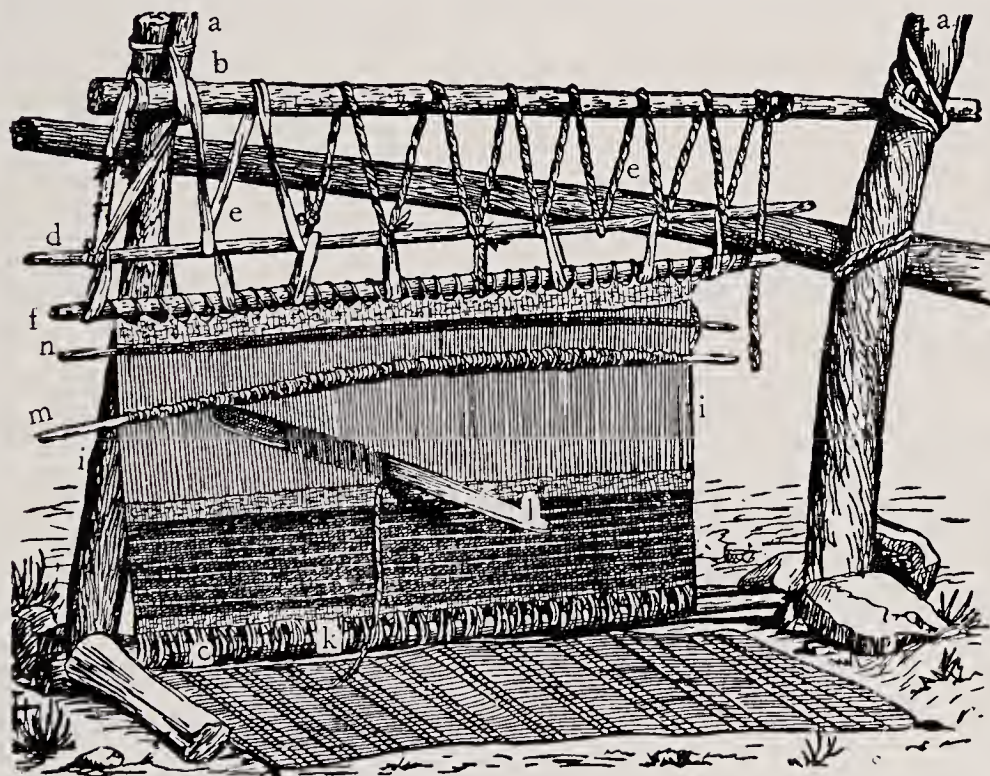
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THE NAVAHO LOOM

Bureau of American Ethnology

LEAFLET No. 3—1930

3rd Edition, March 1951

Navaho Spinning, Dyeing and Weaving

1. THE NAVAHO INDIANS, the most important Indian weavers, belong to the Athabaskan stock, number about 60,000, and live on a large reservation in northeastern Arizona and adjoining parts of New Mexico and Utah.

2. SHEEP were first obtained from the Spanish and later from the American Government. The care of the flocks is a principal activity of the tribe.

3. SHEARING is done in the fall and spring, usually by the men. Modern steel shearing implements are used.

4. CLEANING. The fleece is beaten or shaken to remove loose dirt. Burrs and lumps of matted wool are picked out. The wool is then washed with water and soapsuds from the amole or soapweed. After washing it is dried in the sun.

5. CARDING. Before spinning is possible the fibres must be untangled and all made to run in more or less the same direction. This is done by carding or combing. The cards are thin rectangular boards, about 4 x 7 inches, set with fine wire teeth and with handles on one side. They look like crude hair brushes. A handful of washed wool is laid on one card and the other is pulled across it a number of times until the fibres are straightened out. The fluffy masses resulting are made into a loose roll 1 to 2 inches in diameter which is rolled into a ball as the work proceeds.

6. SPINNING. This is done on a spindle, a slim, round, slightly tapering stick 1 to 2 feet in length, with one end quite sharply pointed and having slipped over it a thin wooden disk 2 to 5 inches across. The disk is fixed several inches above the butt. It acts as a fly wheel and also keeps the wool on the spindle. It is called the spindle whorl.

To spin, the woman, seated on the ground, takes one end of the roll of combed fleece in her left hand and holds it against the point of the spindle, rapidly revolved by the right hand, until it catches and twists spirally down the spindle shaft, the butt of which rests on the ground. As the loose roll twists around the spindle it reduces rapidly in size. The reduction is increased by drawing the thread away from the spindle with fairly hard jerks. When a section has been brought to a quite small diameter it is allowed to roll up on the spindle shaft, after which a fresh arm's length is drawn out for spinning. When the spindle is full the yarn is removed and rolled into a ball.

The yarn produced by the first spinning is very coarse, lumpy and uneven, so that it has to be respun a number of times before it is fit for weaving. The finest and hardest yarn, used for the warp, must be spun as many as 6 times.

7. DYEING is usually done after spinning. With 2 exceptions the yarn is boiled in an earthenware or metal vessel in water containing the dye and the mordant. Wool to be dyed with indigo is soaked in a cold solution. Orange was produced by rubbing the wool with a paste made of canaigre root, *Rumex hymenosepalum*.

8. DYES. The old native colors were naturally colored white, grey and dark brown wools; yellow from the flowers of the rabbit-weed, *Bigelovia graveolens*; a pale reddish tan from a mixture of the barks of alder, *Alnus incana*, and mountain mahogany, *Cerocarpus parvifolius*; and black from a mixture of sumac twigs and leaves, *Rhus aromatica*, yellow ochre and pinyon gum, *Pinus edulis*. From the whites in Mexico came blue indigo and several shades of bright red cochineal. The red dye stuff was not used, but ravelings of already dyed cloth, the celebrated bayeta, a coarse wool baize from England. There were also green, blue and yellow bayeta, the blue being indigo and the yellow—pure and mixed with the blue for green—from fustic. All shades have been obtained with aniline dyes since about 1875. Since about 1920 there has been a revival of native vegetable dyes. Many shades, mostly rather pale, have resulted from this movement, but the processes are still experimental and full information can not be given. It is possible that a red was once made from red ochre, or perhaps yellow ochre which turns red with heat.

9. MORDANTS are substances which fix the dyes in the wool. Urine, crude alum or alunogen, and juniper ashes have been used.

10. THE LOOM. (Single letters refer to the picture on the cover.) Two posts (a, a) are set solidly in the ground somewhat farther apart than the width of the blanket to be woven. Sometimes two young trees, or a tree and a post are used. Between the posts are fixed two cross pieces (b, c) one on or very near the ground and the other near the top of the posts. From the upper cross piece is hung a small pole called the yarn beam (d). It is held in place by a rope (e) wound spirally around the beam and the cross piece. By tightening or loosening this rope the yarn beam can be raised or lowered. When this solid framework is finished the weaver prepares the blanket frame. She lays on the ground two smooth, slim poles at a distance equal to the length of the projected blanket. They are kept fixed in position by two other poles temporarily fastened between their ends. The square thus formed is called the blanket frame. While it is still lying on the ground, the warp is placed upon it.

11. WARP STRINGING. The warp is a continuous strand of the finest yarn. The end is tied to one of the poles at the corner of the blanket frame and is strung on it in a series of long figure 8s. The stringing being finished, a heavy doubled cord is twined between the loops of the warp on the outside of the poles on which it has been wrapped. This spaces the warp loops evenly. By means of a spirally wound length of heavy yarn which passes under the twined cord between the loops of the warp and around a second pole laid against the first one, the warp is securely fastened to the inside of the second pole. The first pole is then withdrawn, leaving the warp tied on the inside of the blanket frame. Heavy cords are fastened between the poles on the outer edge of the warp. These are to form the edges of the finished blanket.

When this process is completed the side poles of the blanket frame are removed and the remaining two, with their connecting web of warp, are tied in the solid loom frame, the top pole (f) being tied to the yarn beam (d) and the lower to the bottom cross piece (c). The warp (i) is made tight by pulling on the spiral rope (e) which holds the top cross piece and the yarn beam together.

12. SHEDS. The two loops of the figure 8 in which the warp is strung are called sheds.

13. INSTALLATION OF HEDDLE. When the warp is firmly placed the weaver attaches a long slim rod (m) to every alternate strand with a series of loops so loosely tied that they can easily be slid up and down on the warp. This rod is the heddle or heald rod. Its purpose is described in paragraph 16.

14. SHED ROD. A second long slim rod (n) is placed between the pairs of warps forming the upper shed. It is not tied, but rests on the central crossing of the figure 8. This crossing is no longer visible because of the extreme tightness of the warp.

15. WEAVING TOOLS. The batten stick (l) is a piece of hard wood about 3 feet long, 3 inches wide and a half inch thick. It has slanting or rounded ends and thin blunt edges. The weaving fork is a short handled paddle with about 10 coarse teeth and a sharp point on the end of the handle. Slender wooden needles a foot or so long are used to thread in the last few courses of weft.

16. PLAIN WEAVING PROCESS. The weaver, almost always a woman, sits cross-legged in front of the loom on the ground or on a low pile of skins or blankets. Balls of wool and her tools are close by. The first step is to pull toward herself all or part of the heddle, thus drawing forward the alternate strands of the warp. Behind these threads she slips the batten stick and turns it at right angles with the warp, thus enlarging the opening made by pulling forward the heddle. Through the space so made she passes the first strand of weft. This is not pulled tight. With the weaving fork she pats it into place and then, turning the batten stick flatways, pounds the weft firmly against the end cord tied to the lower pole. The side cords are caught by the weft at the ends of each row.

The next step is to remove the batten and to pull the shed rod (n) down to the heddle (m). This forces the strands tied to the heddle backwards and the others forward. The batten is then inserted in this new opening, the reverse of the one first made by pulling out the heddle. The second strand is passed through this new opening, patted in place with the comb and pounded down on the first strand with the batten. This process is repeated until the blanket is finished.

When the finished work gets too high for the seated weaver to reach, the rope which fastens the blanket frame to the upper cross piece is loosened enough to bring the work within reach again. The fold of completed blanket thus made is strongly sewed to the lower frame work. After tightening the warp by pulling up the spiral rope the work continues.

When the blanket is so nearly finished that there is no longer room for the batten stick the weaver pokes the wool into place as best she can with the comb or with long wooden needles.

Ordinarily no shuttles are used, as the opening made by the batten stick is plenty big enough to allow the passage of small balls of yarn. But sometimes when a strip of color runs the full width of the blanket the yarn is wrapped lengthwise on a small piece of wood.

17. FANCY WEAVES. Diagonal, zigzag, diamond and double faced blankets are woven on the same loom, but with 2 to 4 heddle rods in use, including the shed rod. Description of these complicated weaves is beyond the scope of this leaflet.

18. BELT WEAVING. Belts, sashes, garters and head bands are woven on a much smaller loom which lacks the heavy solid frame. In these articles the warp is seen and the weft is invisible, the reverse of the condition in blankets. The patterns are made with the help of several heddles. Detailed descriptions of these processes are also too involved for inclusion in this leaflet.

19. DESIGN. So far as is known the first blankets had simple cross stripes. As time went on the stripes were varied with zigzags, connected and single diamonds, square frets or meanders, boxes and crosses. The spaces between these larger elements were likely to be filled with short narrow lines. The units making up these elements were square-ended. After the introduction of machine-made yarns in the seventies the designs began to run the length of the blankets instead of across. Small and highly elaborate zigzag patterns came in, often edged with a contrasting color. The square ended units were no longer seen as a rule. This style was the vogue in the eighties. In the next decade blanket design began to adopt the forms most familiar today. Borders appeared and have very largely persisted, as has the lengthwise direction of the pattern. As a rule the patterns consist of large and small elements, often not connected, on a background of contrasting color. Neutral, uninteresting colors have been in the majority. Since 1920 under the influence of the modern revival there has been a tendency, fortunately growing, to revert to the transverse patterns and the rich colors of the best period. See also paragraph 16, Leaflet 59-60.

The designs are conceived in the mind of the maker, no pictured guide being used. The designs are without significance, though some of the more common have generally accepted names. In recent years a number of blankets have been made showing designs taken from the elaborate sand-paintings of the tribe. These are often called "sacred" or "ceremonial" blankets, but without justification. They are not used in ceremonies and are not, with a few exceptions, accurate copies of the sand-paintings.

20. DESIGN MAKING PROCESS. Designs are made by the placing in the warp of weft threads in the colors required by the pattern. Each of these separate threads is carried through the warp until a color change is indicated by the pattern plan. The ends of these wefts are not cut off, but are pulled out of the warp and left hanging. On the return course they are reintroduced into the warp as needed.

Compiled from the following sources by Jean Allard Jeançon and F. H. Douglas:

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SMITHSONIAN INSTITUTION

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EVERYBODY'S MAGAZINE

6. The Making of a Navaho Blanket—Pepper. January, 1902.

SOUTHWEST MUSEUM, LOS ANGELES

7. Navaho Weaving, Its Technic and History—Charles Amsden, 2nd edition, 1949.

THE MACMILLAN CO., NEW YORK

8. Spider Woman—Gladys A. Reichard. 1934.

J. J. AUGUSTIN, NEW YORK

9. Navajo Shepherd and Weaver—Gladys A. Reichard. 1936.
Color plates, 5, 9, 11, 13; photos and drawings, 1, 3, 4, 5, 6, 7, 8, 9, 10, 11 and 13.

LABORATORY OF ANTHROPOLOGY, SANTA FE, NEW MEXICO

10. Navajo Textile Arts—H. P. Mera.

SAN VICENTE FOUNDATION, INC., SANTA FE, NEW MEXICO

11. The Alfred I. Barton Collection of Southwestern Textiles—text by H. P. Mera. 1949.

EDUCATION DIVISION, U. S. OFFICE OF INDIAN AFFAIRS

12. Navajo Native Dyes—compiled by Stella Young. 1940. Indian Handcrafts 2.
13. The Navajo and his blanket—Hollister. Privately printed 1903.

DENVER ART MUSEUM

IN COOPERATION WITH
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Title III ESEA

NORMAN FEDER - Curator



Old Style

New Style

PUEBLO WOMAN'S COSTUMES

Leaflet No. 4

1930

2nd Printing, December, 1937

Reprinted July 1967

PUEBLO INDIAN CLOTHING

THE PUEBLO INDIANS. When the Spaniards entered New Mexico and Arizona in the 16th century they found certain Indians living in some 75 towns of stone or adobe houses. The Spanish word for town being "pueblo" it was applied by the Spaniards to these towns, and the inhabitants came to be called Pueblo Indians. At present there are*27 pueblos, distributed as follows: In north central New Mexico, along the valley of the Rio Grande river, are 17 towns running from north to south in the following order: Taos, Picuris, San Juan, Santa Clara, San Ildefonso, Nambé, Tesuque, Jemez, Cochiti, Santo Domingo, San Felipe, Santa Ana, Sia, Sandia, Isleta, Laguna and Acoma. Not far south of Gallup, New Mexico, lies Zuñi. In north eastern Arizona are nine towns of the Hopi Indians. The total population of all the pueblos is about 15,300. The Hopi are of Shoshonean stock, the Zuñi have their own distinct language, and the Rio Grande towns are members of four tribes, each having its own dialect: Keres or Queres, to which belong Acoma, Cochiti, Laguna, San Felipe, Santa Ana, Santo Domingo, Sia; Tewa to which belong Nambé, San Ildefonso, San Juan, Santa Clara, Tesuque; Tigua, to which belong Isleta, Picuris, Sandia, Taos; Jemez. The last three tribes belong to the Tanoan stock.

MEN'S CLOTHING

HEADGEAR. For every day wear the only thing worn on the head is a narrow band of folded cloth to keep the hair in place. When the hair is long the knot is wrapped in a band of woven material or a number of heavy cords. In dances and religious ceremonies the head is often covered with a mask, of which there are many varieties in every degree of elaborateness. Masks are made of skin, cloth, wood and basketry and are highly decorated with paint, feathers, etc.

BODY COVERING. †Shirts of skin or cloth are universal, those of skin being worn in the ceremonies of the northern New Mexico pueblos especially. The Hopi wove blue woolen shirts which were used extensively by the other pueblos. Such shirts have sleeves and long tails hanging well below the waist. Skin shirts are of similar pattern, the tails being usually somewhat shorter. They are commonly decorated with fringes. When trousers or kilts are not worn the breech cloth is universally used. In northern New Mexico it is of flannel and very wide and long, hanging nearly to the ground. Elsewhere it is of white cotton, and short and narrow. For dances or ceremonies the body is usually bare, and the embroidered or painted kilt of cotton reaching from waist to knees, replaces the breech cloth. Belts and sashes, both of cotton and wool, either white or colored, are worn with the kilts.

A robe of some sort is common. Formerly they were made of rabbit skins cut into narrow strips and woven, cotton, cloth with feathers interwoven, and different kinds of dressed skins. These robes were gradually replaced by woolen blankets woven by the Navaho, Hopi and Zuñi. Robes are very conspicuous nowadays at Taos, where half the population, called the summer people, are almost always wrapped in a white sheet, while the other half, called the winter people, wear bright red flannel blankets in the winter and light

*44 if colonies are counted. See Leaflet 45-46.

†Embroidered cotton shirts were certainly made at Acoma and Jemez, and possibly elsewhere. Shirts with drawnwork fronts are made in several towns.

weight cotton blankets in the summer. Wherever robes are used they are either wrapped closely about the body, often covering the head, or are more or less folded up and carried about the waist or over one shoulder.

LEG COVERINGS. Loose white cotton trousers, about ankle length, split up the sides a foot or so, and fastened at the waist under the shirt tails, were common among the western pueblos, especially among the Hopi. In northern New Mexico hip length leggings of skin or colored flannel were preferred to trousers. Knitted stockings of blue or black wool, made without feet or knees, were in more or less general use. Narrow woven bands were used for garters.

FOOTGEAR. Moccasins of hide were universally used. The soles were of hard rawhide and the uppers of soft buckskin, usually colored and sometimes beaded. Ceremonial moccasins are often extensively decorated with paint, fur, beads and porcupine quills.

MODERN CLOTHES. Garments of white manufacture, such as felt hats, cotton shirts and overalls, and shoes have largely replaced the native costume except amongst the Hopi and the very conservative old people in some of the other more remote pueblos.

WOMEN'S CLOTHING

HEADGEAR. Nothing is made for wear on the head alone except the tablitas worn during certain dances. These are pieces of thin flat boards, from one to two feet high and wide and carved and painted in many different ways. They are worn upright on top of the head at right angles to the length of the skull. In the Rio Grande pueblos a fold of a large shawl is usually pulled up over the head. Large squares of calico or silk are also draped over the head.

BODY COVERING. The body was covered with a blanket, four to five feet long and about three feet wide. This was wrapped around the body under the left arm and over the right shoulder, and fastened together on the right shoulder and down the right side. Often the lower part of the right side was sewn together, leaving only the upper right hand corner open. A long, narrow woven belt was wrapped several times around the waist. Nowadays a sleeved garment of manufactured cotton is very generally worn under the blanket. It often is trimmed with lace around the bottom and shows below the blanket. Cloth of white manufacture, cut in the shape of the blanket, and worn in the same manner, usually replaces the native garment in the Rio Grande pueblos. Fancy aprons are often worn.

The native dress for ordinary use was woven of wool, either from black sheep or dyed black or dark blue, by several of the western pueblos, especially the Hopi, and traded to the Rio Grande peoples. These dresses are called mantas. They were decorated along the edges with patterns woven in the fabric or embroidered with red, blue or green wool. The latter are from Acoma or Laguna. Diamond

and diagonal weaves were common. Such dresses are now woven at Zuni or by the Hopi, Acoma and Laguna no longer making them. Excepting in two Hopi villages they are now used only on ceremonial occasions. The Hopi still make large numbers of white cotton shawls and robes for bridal trousseaus. The long edges are decorated with wide red and blue stripes or with elaborate embroidered designs. They are also used at ceremonies. ‡

FOOTGEAR. Formerly the women went barefoot, only wearing moccasins when the weather necessitated it. Two types of high top combination moccasin-legging are used. The unmarried women wear a moccasin with an attachment similar to a spiral puttee, reaching to the knee. They are made of soft buckskin, colored white with pipe clay. They are very full and make the wearer seem to have very fat legs. Among the Zuñi the fullness of the leg-wrapping is an indication of the hunting skill and prosperity of the woman's husband or father. The married women wear a full top boot, also colored white, and very loose fitting above the ankle. They have several wide folds below the knee and are held in place by a buckskin thong.

JEWELRY. Both sexes are fond of jewelry, wearing silver necklaces, belts, bracelets, rings, buttons, etc., made chiefly by the Navahos and Zunis, and necklaces and earrings of shell and turquoise.

CHILDREN'S CLOTHING. Children wear miniature reproductions of the garments worn by the adults. Up to the ages of 8 to 10 the children of both sexes go naked in the summertime. This is especially true in the more remote pueblos.

Compiled from the following sources by Jean Allard Jeançon and F. H. Douglas.

AMERICAN MUSEUM OF NATURAL HISTORY, NEW YORK

1. Indians of the Southwest—P. E. Goddard. Handbook No. 2, 4th edition. 1931.

BUREAU OF AMERICAN ETHNOLOGY

2. The Zuni Indians—Matilda Stevenson. 23rd Annual Report, 1901-02. 1904.

NEW MEXICO ASSOCIATION OF INDIAN AFFAIRS

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A full statement about the styles in modern pueblos.

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4. The Pueblo Indians—Thomas Donaldson. Extra Census Bulletin, 11th Census. 1893.

DENVER ART MUSEUM

5. Field Notes 1932-36—F. H. Douglas.

6. An embroidered cotton garment from Acoma—F. H. Douglas. Material Notes No. 1. 1937.

THE TORCH PRESS, CEDAR RAPIDS, IOWA

7. The Hopi Indians—Walter Hough. 1915.

‡Cotton articles are woven and embroidered at Zuni. Acoma formerly produced them. See reference 6.

DENVER ART MUSEUM

DENVER, COLORADO

Department of Indian Art

RICHARD G. CONN, CURATOR



PIMA BASKETS

Leaflet No. 5

1930

4th Printing, June 1957

PIMA INDIAN CLOSE COILED BASKETRY

TRIBAL LOCATION. The Pima Indians are a sedentary, semi-agricultural people of Piman stock, numbering about 5,350, and living on the Salt River and Gila River reservations in south central Arizona, not far from Phoenix. The country is a dry, sandy desert of broken plains and mountains, with very scanty rainfall. Many types of cactus and of desert grasses and brush grow sparsely in the sunbaked soil. Willow, cottonwood and cat-tail grow along the water courses. The people live in small, permanent villages of earth lodges. They raise several kinds of grain and vegetables with the aid of irrigation.

FORMS. The Pima women have long made excellent baskets in many shapes and sizes. The following are the principal forms made today: Basket bowls (a) with curving walls, ranging in depth from 1 to 10 inches and in diameter from 6 to 30 inches; baskets of similar size with straight walls, either sloping out (b) or rising at right angles to the bottom (c); jar shaped baskets or ollas, with or without lids, (d) ranging in height from 4 to 40 inches and in diameter from 6 to 30 inches, either globular, or with shoulders and constricted necks; flat plaques (e); miniature replicas (f) in very fine weaves of all the above forms. (See cut on cover.)

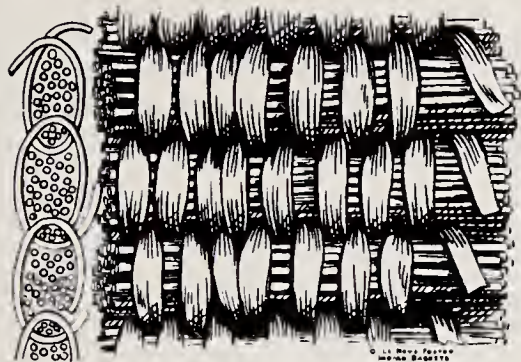
USES. Basket bowls are used for the preparing and serving of food, for winnowing grain, and for the transportation of various small objects; the straight sided baskets serve for the temporary storage of foodstuffs, etc.; the jar baskets are grain or meal storage bins; food is served on the flat plaques; the miniature baskets are apparently made only for sale.

MATERIALS. Foundation coil; cat-tail (*Typha angustifolia*), fine splints of cottonwood (*Populus fremontii*) and willow (*Salix nigra*). Sewing material: splints of willow, of the outer covering of the seed pods of devil's claw or martynia (*Martynia probosidea*) and of cottonwood, bark of the mountain mahogany or manzanita (*Cercocarpus parvifolius*).

PREPARATION OF MATERIALS. Cat-tails are gathered in July, split, dried and tied in bundles. For the cottonwood and willow splints young twigs are gathered in the spring, stripped of bark with teeth and fingers, and split into splints, or long thin slivers, with teeth or awl and fingers. The martynia pods are gathered in the autumn when dried, and are soaked in water or buried in moist earth. When soft, the outer covering is stripped off and split into several splints. Martynia is cultivated to some extent by the Pimas. Mountain mahogany bark is gathered in the spring, stripped from twigs and tied in bundles. Before being used in basket-making all materials are

softened by soaking in water or by burying for some time in moist earth.

TOOLS. Awls were formerly of bone, cactus thorn, or mesquite wood, but now are commonly made of steel, with handles of wood or gum. Steel knives of convenient size.



MAGNIFIED SECTION AND CROSS SECTION OF
CLOSE COILED BASKET

knot of four or more strands of sewing material is made. The protruding ends are gathered into a bundle which is wrapped with a sewing splint, thus beginning the coil.

From these beginnings the sewing of the coils is carried on. Each coil is stitched with splints of sewing material to that portion which is already made. The stitching is done by making a hole with an awl through the upper edge of the coil already made. The sewing splint is passed through this hole, over the foundation material above it, and then back through the next hole in the finished coil, continuing thus until the final coil is reached. Foundation material is added as it is needed.

Bowls have counter-clockwise coils and deep, straight sided baskets and jars clockwise coils. While being made bowls are held with the inside facing the maker and the sewing is done from the inside on the edge farthest from the maker, thus producing the finished surface on the inside of the basket. The jars and other deep forms are held with the opening facing away from the maker and are sewed from the outside on the edge nearest the maker, so that the finished surface is on the outside of the basket. Exceptions to these rules are occasionally found.

As the wall rises from the bottom of the basket its in or out curve is formed by changing the position of the awl hole from the top of the completed coil to the inner or outer side.

Basket rims are finished with an over-and-over stitch, either straight or oblique, or with a herringbone braid. The latter finish is the most common.

COLORS. Black from the martynia; creamy yellow from the willow; dead white from the cottonwood; red from the mountain mahogany. The overwhelming majority of close coiled baskets show only the first two colors. The use of the white cottonwood and of the red mountain mahogany is of fairly recent occurrence.

DESIGNS. There are two types of design, one having geometrical forms and the other life forms. In the first class are found endless variations of frets, whorls, swastikas, stars, crosses, terraces, zigzags and triangles. In the second class are found conventionalized forms of men, animals, birds, plants, etc.

Human and animal forms have been borrowed in recent times from the Apache, eagle and kachina designs from the Hopi.

The vast majority of baskets show black patterns against a light ground, black centers and black rims.

As far as can be ascertained the basket makers have no knowledge of the meaning of the geometrical designs. These have been named by the Americans squash blossoms, turtle backs, whirlwinds, stars, shields, coyote tracks, butterfly wings, etc. The so-called "mystic maze" design has probably been copied by the Pima from a figure carved on the walls of the Casa Grande ruin, located on their reservation.

MODERN BASKET MAKING. Because of the lack of interest of the young people in their native crafts Pima basketry is dying out. Baskets are now mostly made for the commercial trade.

Compiled from the following sources by Jean Allard Jeançon and F. H. Douglas:

AMERICAN MUSEUM OF NATURAL HISTORY, NEW YORK

1. Basketry of the Pima and Papago. Mary Lois Kissel. Anthropological Papers Vol. 17, Pt. 4. 1916.

BUREAU OF AMERICAN ETHNOLOGY

2. The Pima Indians. Frank Russell. 26th Annual Report, 1904-05. 1908.

UNITED STATES NATIONAL MUSEUM

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ARIZONA ARCHEOLOGICAL & HISTORICAL SOCIETY

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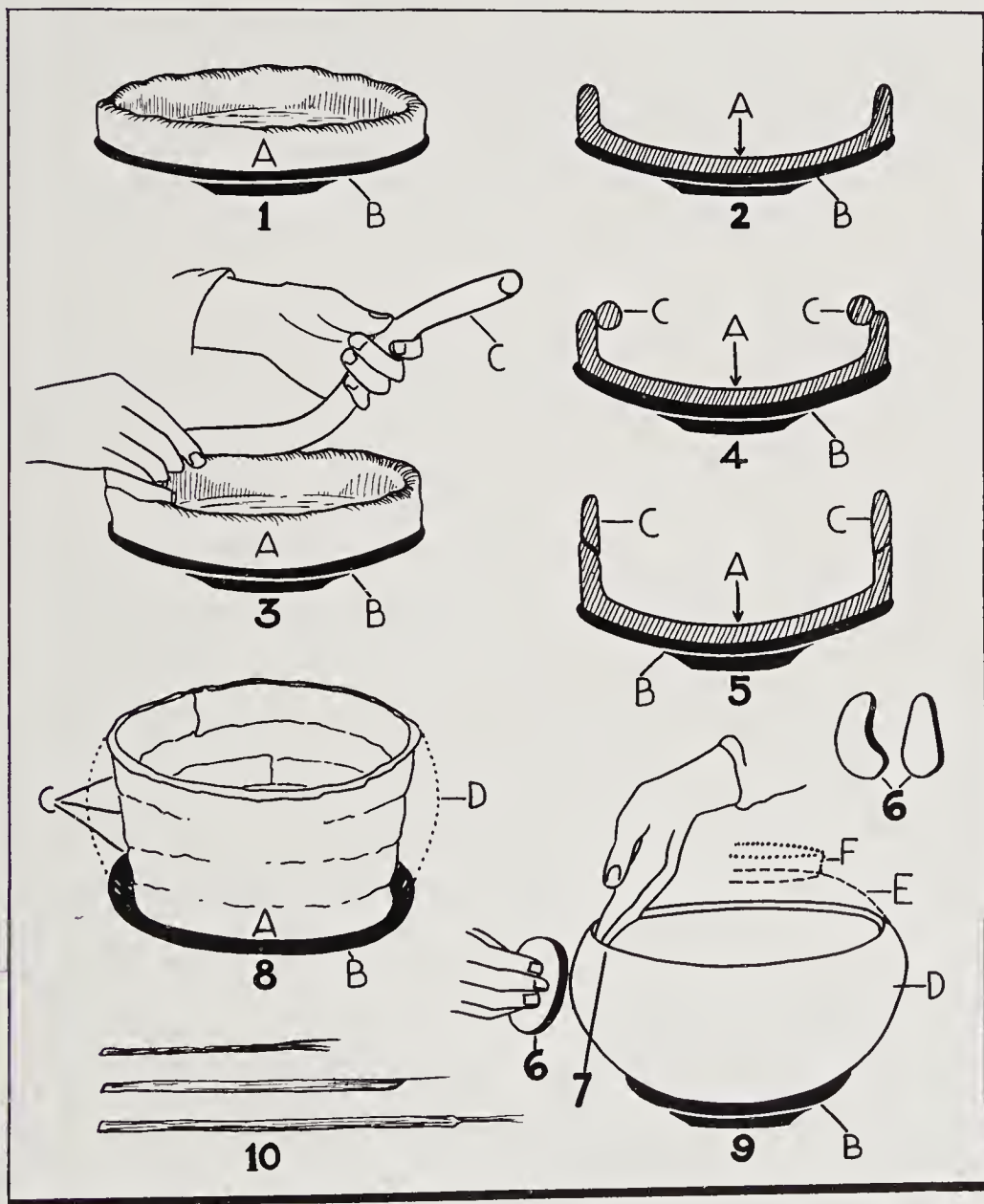
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DENVER ART MUSEUM

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Title III F SEA
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Adapted from "Pueblo Pottery Making"—Guthe

LEAFLET NO. 6—1930

2nd EDITION, OCTOBER, 1935

PUEBLO INDIAN POTTERY MAKING

Reprinted July 1967

1. PREHISTORIC POTTERY. Pottery has been made in the Southwest since about 300 A. D. The Basket-makers began the process and the Pueblo tribes which succeeded them carried it on. In general pottery reached its height in the 14th century. It was formerly believed that pottery making had a much longer history, but in the last few years datings by the Douglass tree ring calendar have accurately determined the history of the art from its earliest beginnings.

2. MODERN POTTERY MAKERS. There has been no break in pottery making since it began. It exists now at all the pueblos but Sandia. Decorated wares are made at Acoma, Cochiti, Jemez, Laguna, San Ildefonso, San Juan, Santa Ana, Santo Domingo, Tesuque, Tsia, Zuñi and by the Hopi. Undecorated utility or cooking wares are made at many villages. Jemez produces very little pottery and the art is practically extinct at Santa Ana. For details of the wares made today see Leaflet 53-54. There are many local variations in pottery making technic which cannot be mentioned in this leaflet.

3. CLAY PREPARATION. Hard, dry clay is gathered in lumps from beds near the pueblos. It is carried home, pulverized by pounding and freed from impurities by winnowing and picking over. Tempering material, which prevents cracking of the molded clay as it dries, is prepared in the same way. Temper is made from sherds or various types of hard mineral substances such as sand. The powdered clay and temper are mixed with water and worked into a unified mass by prolonged kneading.

4. MOLDING. Pottery is made by women seated or kneeling on the ground or floor. A round pat of clay (1-A) is pressed into a base (B) resting on a platform on which it may be turned. The base is a china or metal saucer, a rounded sherd or an old basket bottom. The edges of the pat are turned up. A roll of clay (3-C) is made by rubbing a lump between the palms. It is applied to the inside of the upturned rim of the pat and pressed firmly in place (3 and 4), being flattened by the process (5). The remainder of the vessel is built up by thus applying and flattening clay rolls (8-C). The walls of small vessels are made with rings of clay the length of which equals the circumference of the piece. For large vessels a continuous rising coil is used.

Walls of all but small pieces are built in sections several inches high (8), each one of which is smoothed and shaped to the proper curve (8-D and 9-D), before other sections (9-E and F) are added. Very large pieces are molded with intervals between the making of each section so as to allow them to dry enough to support the weight of the next. In the intervals the top edges of the sections must be kept damp. Very small pieces and solid figurines are shaped without coiling, being modeled with the fingers. A number of medium sized vessels are usually molded at one sitting. When the molding is done a final careful smoothing is given. Time for molding runs from 10 minutes for small bowls to 6 hours for large jars.

To shape a vessel the potter constantly turns it on its base, smoothing and bending the walls with wet fingers and curve edged tools of gourd rind (6). If the tool is smoothing the outside, the fingers (7) are always inside to support the flexible wall against the pressure of the tool (6), and vice versa. The gourd tools (6) are cut in several curves to fit the shapes of different vessel types. The potter's wheel is never used.

5. DRYING. The damp vessels are dried outdoors. As rapid drying is not advisable the pots are kept in the shade. In rainy weather they are dried

indoors. If properly tempered, vessels dry without cracking. Small cracks can be filled, but large ones are beyond repair.

6. SCRAPING. The dried vessels are carefully scraped with a sharp edged tool to remove surface irregularities and to reduce wall thickness if necessary. Small thin spots or depressions are also filled out at this time. The surface may be moistened before scraping. Metal tools have largely replaced the stone or sherd scrapers once used.

7. APPLICATION OF SLIP. Slip is a thin mixture of clay and water, the application of which creates a smooth surface on pottery vessels. It is applied with a bit of cloth or fur. Several coats are customarily used, each one drying before the next is put on. Wide-mouthed bowls are slipped both inside and outside; small mouthed vessels are treated only on the exterior. White and several shades of red, orange and yellow are the colors used.

8. POLISHING is done as the slip is applied. Very smooth pebbles, usually water worn, are rubbed with a short rotating motion over the slipped surface as it dries, the friction producing the polish. Degree of polish depends on the length of the rubbing. Sometimes a thin coat of lard is laid on to aid in producing the polish. No modern pottery is made shiny by the use of glaze.

9. PAINTING MATERIALS. Brushes (10) are made of yucca leaf. From the leaves are cut pencil shaped sections 4 to 6 inches long and not over a quarter inch in diameter. The pulp is chewed out of an inch long section, exposing the fibres of the leaf. The fibre section is trimmed to several sizes for coarse or fine work. Turkey leg tendons are sometimes used for brushes. White paint is more or less pure kaolin. The yellows, oranges, reds and browns are iron tinged ochres. Black varies with locality. It is either vegetal, made by boiling the bee-plant or the tansy mustard; or mineral from iron or manganese. All of these colors are ground to powder on small stone mortars and mixed with water to a creamy consistency.

10. PAINTING TECHNIC. The painter first applies the main framework of the design which she carries in her mind. Its subdivisions may have been measured with the fingers or spread of the hand. No rulers or dividers are used. After the main lines are in place smaller lines are applied and lastly areas of solid color. The brush is usually held in the right hand. The fingers may or may not touch the surface according to the need of the moment. The elbow may be pressed to the body. The strokes are made free hand and are usually not longer than 6 inches. Individual needs determine whether the lines are retouched after the first stroke.

11. FIRING. In a place well sheltered from wind a fire is built and burned to coals. Stones or tin cans are placed among the coals to support a grate. On it are piled, upside down, as many vessels as possible, from several dozen small pieces to 1 or 2 large jars. Care is taken that sides of vessels do not touch. The pile of pots is enclosed with sheets of metal or with large sherds. These prevent flame from touching the pots and making dark spots. Cakes of dried sheep manure are set around the pile and laid over it until it is completely covered, only chinks being left to allow circulation of air and heat. Coal and cedar wood are sometimes used in conjunction with the manure cakes.

The fuel is lighted by kindling pushed under the grate. The firing continues until the fuel is consumed or until the potter, after exploratory poking and peering into the mass, decides that the work is done. Firing lasts from one half to two hours under ordinary circumstances. Temperatures of from 1200 to 1500 degrees Fahrenheit are reached.

To produce polished black pottery, the firing proceeds as described until the vessels are at red heat. The fire is then smothered with powdered manure, which produces a dense smoke within the mass. This smoke deposits carbon on the polished red pieces and turns them black without dimming the polish.

12. AFTER FIRING. When the potter decides that the pots have been fired sufficiently she removes them from the ashes with sticks and sets them nearby to cool. When capable of being handled the ashes, etc. are wiped off with a dry cloth. Sometimes the vessels are wiped with a slightly greasy cloth.

13. POTTERY FORMS AND USES. The most common types are listed below. Unusual local variations are beyond the scope of this leaflet.

Large jars for storing food and water, 18 to 30 inches high, 15 to 24 inches wide. Jars for carrying water, 6 to 12 inches high and wide. Wide mouthed bowls for preparing and serving food, 1 to 8 inches deep, 4 to 18 inches wide. Semi-globular canteens, 5 to 12 inches wide. Bowls, dippers and angular boxes, usually rather small, for ceremonial use. Eccentric, human, animal and bird forms, usually small, for ceremonial use and commerce. Flat tiles in several shapes.

14. DECORATION. Painted designs are geometric figures, conventionalizations of life forms, more or less realistic life forms and combinations of these types. Incised or scratched designs occur, but are not common. Rims are molded into terraces and other shapes, and modeled life forms are applied to walls, handles and lids.

Compiled from the following sources by F. H. Douglas.

YALE UNIVERSITY PRESS

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COLUMBIA UNIVERSITY PRESS

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MUSEUM OF NORTHERN ARIZONA, FLAGSTAFF

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DENVER ART MUSEUM

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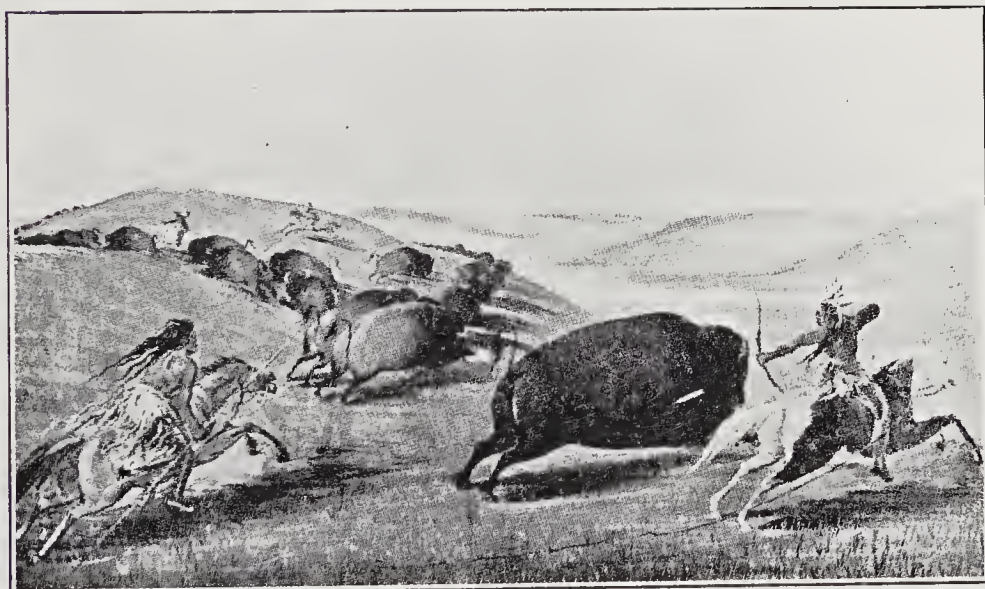
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THE CHASE ON HORSEBACK

From a painting in the National Museum by George Catlin

Leaflet No. 7

1930

Reprinted July 1967

THE BUFFALO AND THE INDIAN

HABITAT. The buffalo, or more properly the American Bison, formerly ranged over North America from near the Atlantic coast to Nevada, from Georgia to the Great Lakes in the east, from the Mississippi Delta to the present Canadian border in the middle west, and from northern Mexico to Great Slave Lake (Canada) in the west. The map accompanying the second book referred to in the bibliography shows the range. The animal existed in this territory in incredible numbers. No exact statement as to its numbers can be made, but there must have been many millions.

The attacks of white men and Indians gradually pushed in the boundaries of the range towards a center located on the plains just east of the Rocky Mountains and running from Texas well up into Canada. The building of the transcontinental railroad in 1869 cut the buffalo into two herds. The northern herd was practically exterminated by 1883 and the southern by 1873. By 1885 less than a thousand animals remained and their extermination seemed inevitable. But public opinion and government regulation stepped in just in time, so that today the animals are steadily increasing. There are probably ten thousand in various zoos and government preserves and several hundred wild animals in the Canadian herd.

METHODS OF HUNTING. There were communal hunts in the spring, summer and fall, usually before the planting and after the harvesting of the tobacco crop. In winter small groups who desired robes in their heavy winter state went out on hunting trips. Hunting by individuals was forbidden. Before the coming of horses and firearms the animals were pursued on foot and killed with bow and arrow and lance. The chase was carried on in the following ways: 1. The animals were driven into large corral-like structures by large numbers of beaters and there killed. 2. The prairie grass was fired in a large circle about a group of buffalo, so that it burned in toward them, forcing them into a close mass that was easily attacked by the hunters. 3. The animals were similarly surrounded and forced together by large numbers of men and boys. 4. In winter after a very heavy snow, the buffalo would sink into the drifts so that they were unable to move and fell easy prey to hunters on snowshoes. 5. In the early spring, when the ice in the rivers was about ready to break up, buffalo were enticed into attempting to cross a stream on the ice by burning the dead grass on the opposite side of the stream, thus disclosing the new green grass. Their weight would break the ice into large masses which floated down the stream, each one with several animals carried on it. The Indians would run out over the broken ice to these islands and dispatch the buffalo. 6. Herds were either driven over a cliff or led over by an Indian disguised as a buffalo. Most of the animals thus attacked were killed by the fall. The introduction of the horse in the late 18th and early 19th centuries tended to break up the old tribal cohesion and the communal hunts. The mounted Indians hunted the buffalo either by surrounding a group of them or by riding through a stampeding herd, killing such animals as came near them.

The different tribes hunted in areas which were assigned to them by intertribal treaties. Many dances, games and ceremonial observances were connected with the hunting of the buffalo.

HIDES were dressed with the hair on for winter robes, bed clothing, floor rugs and to represent the animal in ceremonies. Dressed hides without hair served for tepee covers, clothing for both sexes (see Leaflet 2 for details of tailoring and sewing) moccasin tops or uppers, quivers, rifle scabbards, saddle trappings, ropes, snowshoe webbing, and bags of all kinds. Medicine bags were made from the hairy skin of the legs, scalp and scrotum. The skin of the head with horns attached was used as a ceremonial dance mask. Undressed or raw hide, without the hair, was used for moccasin soles, knife scabbards, parfleches or flat purses and for boat covers. Shields were made of shrunken hides.

HOOFS AND HORNS were cut up and made into ceremonial rattles. They were cleaned, polished and used to hold tobacco, medicines and gunpowder. Sections of horn were scraped thin and shaped into large spoons, ladles and drinking cups. The tips of the horns were cut off to be used as cupping instruments by the native doctors. Whole horns were worn as insignia of office.

HAIR was spun and woven into ropes, belts, sacks and personal ornaments.

MEAT. The slain animals were skinned and dressed where they fell. The meat was divided up according to tribal regulations. The killer of each animal received the hide, the hump or fat meat on the shoulders, the tongue, the tenderloin and other choice parts. The remainder was divided up among his helpers. By this system poor and disabled persons were sure of food.

The meat was carried to the camp and turned over to the women to be prepared for food. Part of the meat was eaten fresh after stewing, or roasting on a stick held over the coals. The remainder was cut into thin sheets and strips, or sometimes into quite large lumps, dried in the sun and finally smoked. Part of the meat so treated was made into pemmican. The meat was pounded into small bits and mixed with fat. This mixture was heated and poured into a bladder or section of the large intestine. The fat in the mixture served to seal the meat from the air, thus preserving it for long periods. Sometimes wild fruits were added to the mixture.

The finest meat came from the young cows. Each cow was estimated to yield 45 pounds of dried meat and 50 pounds of pemmican. The tongue was considered the choicest bit of the buffalo. It was dried and smoked, or eaten fresh after cooking.

TALLOW. The fat of the animal was carefully collected and preserved in large balls or in bags to be used when needed in cooking or the making of pemmican.

SINEW was made from the large tendons of the back and legs. The tendons were removed from the body as intact as possible and thoroughly dried. When desired for use they were soaked until free from all natural glue. They were then gently pounded until the fibres were completely separated. The fibres so made were twisted into thread, bowstrings, snowshoe webs and ropes.

INTESTINES were cleaned and eaten raw, or baked on hot coals. Sometimes sections of the large intestine were used as waterproof bags to hold pemmican.

BLADDER. This was cleaned, dried and made into a pouch for small articles. Often a small beaded disk was sewed to the bottom and a beaded band around the neck. These bladder bags were waterproof and were used principally to carry objects which had to be kept dry.

BONES were cracked after boiling and the marrow extracted and kept in bags until needed for food. The bones were shaped into tools and ornaments of all sorts. Awls, chisels or fleshers, tampers for pipes, hoes made from the shoulder blades, pipebone beads and pendants were made in great numbers. The skulls were used ceremonially at dances, especially the Sun Dance. Teeth were strung on necklaces.

DROPPINGS or buffalo chips, well dried in the sun, were used very extensively as fuel. They burned with a clear, hot flame and produced an incandescent bed of coals. There was very little smoke, which was of great advantage to the Indians, as fires could be safely made without the smoke betraying them to their enemies.

MYTHOLOGY. The spirit or ghost buffalo, the first of all buffalos, was said to have been born in a cave in the north. He was pure white and was the patron of medicine men and doctors, teaching them the healing art, especially as regards wounds. The rare albino animals found occasionally on the plains were greatly revered by the Indians because of their resemblance to the spirit buffalo.

The animal was the totem or fetish of the Buffalo societies which existed among the plains tribes. Members of these societies had personal names indicating movements, postures and actions of the beast, such as Standing Buffalo. The months were designated by the habits of the animal. The buffalo became the symbol of the leader and the type of long life and plenty. Buffalo ceremonies and stories were a constant delight to the people.

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DENVER ART MUSEUM

DENVER, COLORADO

Department of Indian Art

RICHARD G. CONN, CURATOR



GRINDING CORN, A PUEBLO INDIAN POTTERY MODEL

Leaflet No. 8

1930

4th Printing, June 1957

PUEBLO INDIAN FOODS

INTRODUCTORY. The Pueblo Indians of Arizona and New Mexico (see Leaflet No. 4 for location and population) have been and are primarily an agricultural people, depending for food more upon the products of their fields and the wild edible products of nature than upon the hunt. The relative scarceness of game in certain portions of the Pueblo territory, combined with the difficulty of capturing it, made the meat side of their diet rather scant and uncertain. Communal hunts for deer and rabbits may have brought a temporarily plentiful supply of meat, but as a rule it was more or less a luxury. For distribution and population see Leaflet 45-46.

FOOD GATHERING. With the exception of the corn harvest there are no clan or group gatherings of either wild or cultivated crops. The gathering of the crops of wild plum, acorn and pinon nut are along the lines of village picnics, lasting a week or more and the occasion of much pleasure making and courting. All other wild crops are gathered in season by women and children in accordance with their own needs and convenience. Many of the smaller wild crops are consumed on the spot instead of being brought home for family use. Juniper boughs loaded with ripe berries are brought home by the men as a treat for the children.

Hunting is done by men and boys. Communal hunts of rabbit and deer used to take place in the spring and fall. The deer were surrounded and driven into traps. The rabbits were killed with oak throwing sticks, shaped somewhat like the Australian boomerang. In former days these hunts had a decided ceremonial side, being led by the war chief and his assistants. Other game was hunted by individual parties, who captured it in traps or killed it with bows and arrows. Since the introduction of firearms the communal hunts have been more or less abandoned.

COOKING METHODS. In former times all cooking was done in fireplaces or on the streets and roofs, the former only since the advent of the Spaniards. Dried dung cakes and different kinds of wood were used for fuel. Boiling and stewing were done in rough, undecorated pots of baked clay. Some dishes were cooked by roasting in the ashes or hot coals, and others by grilling. Baking was done in adobe ovens or upon flat stones laid over a fire. In modern times American cook stoves have come into quite common use, and metal pots and pans have replaced the clay dishes.

NATIVE FOODS

BERRIES were eaten raw, boiled, or mashed into a paste which was made into cakes and fried. Berries commonly used were: hackberry, juniper, chokecherry, gooseberry, wild currant, sumac, wild strawberry, ground tomato, false Solomon's seal, bear berry, tomatillo, bull nettle, ground saracha and matrimony vine.

BEVERAGES. Infusions of the leaves of thelesperma, coyote plant, coryopsis, mistletoe and of teamster's or Brigham's tea plant were used as beverages before the introduction of tea and coffee.

GREENS. The leaves, stems or tops of many plants were eaten either raw, boiled or fried, as individual dishes or mixed with meats or other vegetables. Sagebrush, milk pink, milkweed, amaranth, pigweed, aster, goldenrod, purslane, bee plant, stanleya, orache or

saltbush, scouring rush, tansy mustard, dandelion, water cress, coriander, horsemint and wild currant were the plants most used for this type of food. Mint leaves were served as a condiment or relish.

NUTS were eaten raw, roasted, or boiled into mush. Acorns, wild walnuts and pinyon nuts were the only native nuts.

ROOTS of wild onion, mariposa lily, prairie clover, vetch, wild potato and milkweed were eaten boiled or raw.

SEEDS of tumbleweed, wormwood, orache, aster, Indian millet, rush grass, lamb's quarter, amaranth, mentzelia, panic grass, coriander, winged pigweed and cocklebur were ground into fine powder and mixed with corn meal as flavoring. These mixtures were usually cooked in the form of dumplings.

SEED PODS of the wild rose, milkweed and milk vetch were eaten raw or cooked. The pods or fruits of all the varieties of cactus were either roasted or made into jellies. Nightshade pods served as a condiment. Peppers are eaten whole when green, both raw and cooked. When dry they turn red and only the skin is used for seasoning, the seeds being too hot.

VEGETABLES. Beans are boiled with meat or alone. The boiled beans are often mashed into paste, which is fried in grease. The paste is flavored with garlic, chili and sage. Squash and pumpkins are eaten when picked, and also are cut into strips which are dried and hung up for use in the winter. Water and musk melons are eaten fresh or are hung up for winter use.

MISCELLANEOUS. Ashes of several plants, notable the salt brush, are used to give different colorings to corn meal dishes. The root of the Colorado rubber plant serves as chewing gum. The dried cakes of boiled down guaco or bee plant sap are fried. All the non-poisonous mushrooms, toadstools and puff balls are fried after boiling. The blossoms of the squash vine are fried. Wild honey is eaten.

CORN was the principal food of all the Pueblo peoples. It has been cultivated by them for hundreds of years. It is found in all the prehistoric ruins. Corn is planted in the spring, and harvested in the late fall. All the tasks of the corn harvest are carried out by nearly the whole population of the villages, and the whole season is one of happiness and festivity. The men do most of the picking, but women and children take an active part in the husking and sorting. Part of the ears are laid aside for seed, others for the reserve stock always kept against a crop failure, and the rest is kept in the homes and ground as needed.

CORN GRINDING. In former times all corn was ground by the women on flat stones called metates. The stones were set on a slant in a box, in the bottom of which was placed a quantity of shelled corn. The woman knelt by the box at the upper end of the stone, holding in both hands a flat, fairly thin piece of stone called a mano, big enough for both hands and rounded on the corners. With this stone she would rake some of the corn up on the slanting stone and then grind it between the large fixed stone and the one in her hand on the downward stroke. Corn was reground several times on stones

of varying degrees of coarseness before the desired fineness was attained.

CORN COOKING. The meal thus ground is cooked in many ways. A large proportion of it is baked in the thin translucent sheets called wafer or paper bread. Corn meal and salt are mixed with water so as to form a very thin gruel. The baker dips her fingers in this thin mixture and sweeps them across a very smooth stone, under which a fire is built. By the time the stone is covered the gruel has cooked and is peeled off in a thin sheet. These sheets are folded up and stored away until needed. Besides this staple form, corn meal is cooked in thicker loaves, as pancakes, doughnuts, thick or thin gruel, mixed with meat, chili, etc., in various forms of tamales, and made into dumplings, usually flavored with various kinds of ground up seeds. Some corn was parched.

MEAT. Deer, elk, antelope, rabbit, prairie dog, squirrel, beaver, bear, mountain sheep, turkey, ducks, small rodents and all birds except scavengers and little birds were all eaten by the Pueblos. Snakes, lizards and salamanders were never eaten. Dogs were perhaps eaten under press of famine, but not as a usual thing. These meats were boiled alone or with vegetables, roasted or grilled. Much meat was sun dried, smoked and stored till needed. It was eaten raw or cooked. It was also pounded up fine, mixed with fat and packed in bags as pemmican.

SALT was obtained by the Hopi from the Grand Cañon and by the Eastern Pueblos from salt lakes in central New Mexico.

FISH were caught in nets and cooked in various ways.

INTRODUCED FOODS

The Spaniards and Americans have introduced the Indian to almost all the common fruits, vegetables and meats used by the white man. Wheat flour has largely replaced corn meal. Potatoes, cabbage, onion, tomato, and garlic are now in common use, and many other vegetables are beginning to be used. Apples, peaches, pears, apricots and grapes have been grown since the coming of the Spanish and are today great favorites with the Indians. Many of these fruits are dried for winter use. The Indians are very fond of bananas and oranges, but do not raise them. Beef and mutton have almost entirely replaced the wild meats, but they are cooked or dried and smoked in the old way. Chickens, eggs and milk are in everyday use as are tea and coffee. Canned goods and manufactured bread stuffs of all kinds are eaten everywhere among the Pueblos. In very many cases the old foods are forgotten or are only used ceremonially.

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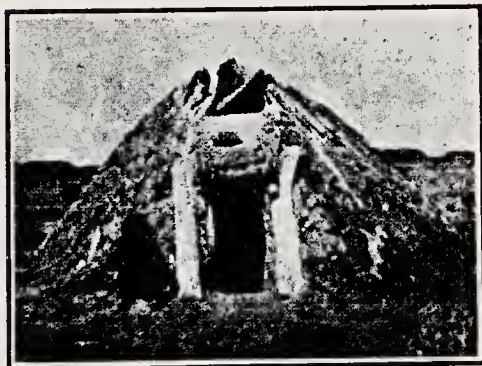
DENVER, COLORADO

Department of Indian Art

RICHARD G. CONN, CURATOR



HOPI PUEBLO



NAVAHO HOGAN (EARTH LODGE)



APACHE HOUSE OF BRUSH AND CANVAS



VILLAGE OF TIPIS

Leaflet No. 9

1930

5th Printing, June 1957

SOUTHWESTERN INDIAN DWELLINGS

THE SOUTHWESTERN INDIANS are the members of those tribes which are found in Arizona and New Mexico, in southwestern Colorado, and just over the Arizona-Utah and Arizona-California borders. Within this area are located the following tribes. Athabaskan stock; Navaho and Apache. Shoshonean stock; Chemehuevi, Hopi, Paiute and Ute. Keresan stock; 7 pueblos. Tanoan stock; 10 pueblos. Piman stock; Pima and Papago. Yuman stock; Yuma, Mohave, Maricopa, Cocopa, Havasupai, Walapai, and Yavapai. Zunian stock; Zuni pueblo. The total Indian population of the southwestern area is about 66,000.

BRUSH SHELTER OR WICKIUP. The simplest form of this type of dwelling is made by setting light poles in shallow holes around a rough circle, bending over the tops and tying them together, and covering them with a rude thatch of grass or brush. In the more advanced form the poles are bent over sufficiently to overlap, and are tied in a series of arches, set so as to make the framework of a dome. Sometimes the thatch is tied direct to the arches, and at other times it is fastened to poles resting against the dome and running from the ground to a central point above the apex of the dome. The thatch is tied on with strips of yucca fibre in regular overlapping courses. In winter the thatch is partially covered with earth. Often canvas is used to supplement the thatch. One archway is left open for an entrance and smokehole. This door is a low opening at the ground level and usually faces east. Each wickiup is from 5 to 7 feet high and from 6 to 10 feet in diameter, and is occupied by one family.

Another type has a double sloping roof like an inverted V, with a ridge pole set on two logs with forked tops. Light poles are laid against this central beam, and long boughs, corn stalks, grass, twigs and other thatching materials are tied to them to make the roof. Brush shelters in these different forms are used by the Apaches, Paiutes, Cocopas, Yumas, Havasupais and Walapais.

TIPI OR TEPEE. This type of dwelling, so common among the Plains Indians, is used in the southwest only by the Jicarilla and Mesquero Apaches and the Utes. From 8 to 20 poles, averaging 20 feet in length and three or four inches in diameter, are set in the ground in a circle about 15 feet across. The tops of the poles are tied together in a cluster several feet below the upper ends. Upon this framework is stretched a nearly semi-circular fabric, once made from buffalo or elk hides, but now usually of canvas. This cover is held in place with wooden or metal pins where it overlaps, and with stakes driven into the ground around the bottom edge. An opening is left at the top to allow the smoke to escape. The wind is kept from blowing down this opening by two flaps of skin or cloth which rise on either side of it, and can be adjusted to the direction of the wind by means of two poles reaching up to them from the ground outside the tepee. The tent is entered through an opening which is closed with a piece of hide or cloth stretched over a light frame of wood. In warm weather the cover is rolled up from the bottom to allow ventilation, and in winter the cover is weighted down with stones and earth is banked around the bottom outside the cover. When the tepee is to be left in position for some time the dirt floor inside it is usually excavated to the depth of about two feet.

Inside the tepee are a central fireplace or pit, and the beds of skins or blankets for one family. Light mats of poles with one end suspended from the ceiling and the other resting on the ground serve for back rests for those sitting around the fire. Various small possessions of the family are hung from the poles. See Leaflet 19.

EARTH LODGE. The dwelling of the Navaho Indian of this type is called a hogan. Three large logs with forked tops are set firmly in the ground in a tripod, so that the butts point north, south and west. The forked tops are locked together. On the east side are placed two parallel logs, about four feet apart, running from the apex to the ground. Where they touch the ground the side and top pieces of a door frame are set up. Smaller poles and brush are piled on this framework till all the openings are filled. A layer of cedar bark is often laid on over the brush. The whole structure is then covered with a thick layer of earth. Smoke escapes through a hole at the apex. The completed doorway projects from the building like a dormer window. The opening is usually closed with a blanket.

Sometimes the hogans have walls of logs laid horizontally in a hexagon, each course being drawn in until a dome is formed. This dome is covered with earth. Very occasionally the hogan walls are laid up with courses of flat stones, set in mud.

Inside the hogan the central floor area is excavated to the depth of about two feet. Sometimes only part of this space is excavated, thus leaving a low bench running around the wall. The fire pit is placed in the center of the room.

The Pima and Papago formerly lived in earth lodges. A circle about 18 feet across was laid out. Within this circle four posts with forked tops were set up at the corners of a seven or eight foot square. Lighter beams were laid on the forks, forming a ceiling. Willow poles were set in the ground around the edge of the circle, and the tops were bent over and lashed to the framework of beams, thus forming a flat dome. Thatching covered this dome of poles, and was in turn buried beneath a thick layer of dirt. There was no smoke hole in the ceiling, the smoke escaping through the single low doorway, which was at the ground level usually facing the east.

This type of house has now been replaced by a square or rectangular single room cabin of wattle and daub construction. Poles are set firmly in the ground around a rectangle about fourteen by sixteen. They are set very close together. Arrow weeds and other kinds of tall plants, or slim rods, are woven in and out between the upright poles, in the same way that the weft threads in a blanket are woven with the warp. When the weaving is completed the outside of the building is plastered with mud. The roof is flat and is constructed of dirt and brush resting on wooden beams.

SUMMER SHELTERS. In connection with all these sorts of dwellings is found a very light, rough type of shelter, principally for summer use. One form has quite tall corner poles connected with beams and roofed over with leafy branches. There are no walls. Another type has two upright posts with a connecting beam against which rests a pile of brush or leafy branches. The Navaho summer house consists of a circular or oval line of cottonwood boughs, with abundant leaves, set upright on the butt end and inclining slightly toward

the center. To the tops of these boughs are lashed lighter ones lying horizontally and forming the roof. A large doorway is left in the side wall.

PUEBLO. This type of dwelling may be defined as a terraced, honey-comb-like communal dwelling of mud bricks or of stone. Such buildings were erected in three forms; a building terraced back on all sides and forming a pyramid; a building around, and terraced back from a court; and a long row of buildings terraced back on one side. Several kinds of materials are used in their construction. The Rio Grande pueblos of northern New Mexico are mostly built of large, sun-dried bricks of mud or adobe mixed with straw. This type of wall is heavily plastered with mud, both inside and out. These plastered walls are often whitewashed. This plastering and coloring are found more or less amongst all the pueblos. Acoma is built of rubble and clay and the Hopi towns have walls of poorly dressed stone laid in adobe. At Zuñi the houses are built of both stone and adobe bricks. Roofs are made by laying heavy beams horizontally on the walls across the narrow dimension of the rooms. On these main beams lighter poles are laid transversely, very close together. They support a thick layer of brush, which is turn is covered over with a heavy coating of adobe. Where there are several stories the ceilings of the lower stories are the floors of those above.

Each clan of the tribe lives in one section of the building, and each family belonging to the clan is assigned several rooms in this section, according to its needs. The larger outside rooms are used for living, cooking and sleeping quarters. Nowadays most of them have hooded fireplaces or American made stoves. The smoke escapes through flues built in the walls. Chimney tops are usually made by piling up two or three pots with the bottoms broken out. Small adjoining back rooms are principally for storage. Formerly there were no doors on the lowest floor, the rooms being entered through trapdoors in the roofs. Windows were made of small sheets of semi-transparent selenite. Now ordinary doors and windows are in common use. There are no inside stairways, ladders and occasional crude outside stairs being used to reach the various levels of the building. Most household activities take place on the flat roof tops and in the courtyards.

The two buildings at Taos rise 5 and 6 stories. Zuñi has one section of 5 stories. Most of the Hopi pueblos and Acoma have 3 or 4 stories, while the Rio Grande towns are of one or two stories only. The present tendency is for each family to build a separate house rather than to live in the communal building. Rooms range in size from small storage spaces to large chambers. The largest rooms are found at Zuñi, where in some cases rooms are 30 feet long, 15 to 18 feet wide and 12 to 15 feet high. These are exceptional, the average rooms being much smaller.

All pueblos have rooms called kivas (kee-vah), which serve as men's clubs and as the scenes of the secret religious practices of the people. In most cases they are set a little apart from the main buildings, though occasionally they are incorporated in them. They are square, round or rectangular rooms of fair size, usually underground among the western pueblos and on the surface in the Rio Grande towns. All the pueblos which are Christian have quite large detached churches of adobe.

Compiled from the following sources by Jean Allard Jeançon and F. H. Douglas :

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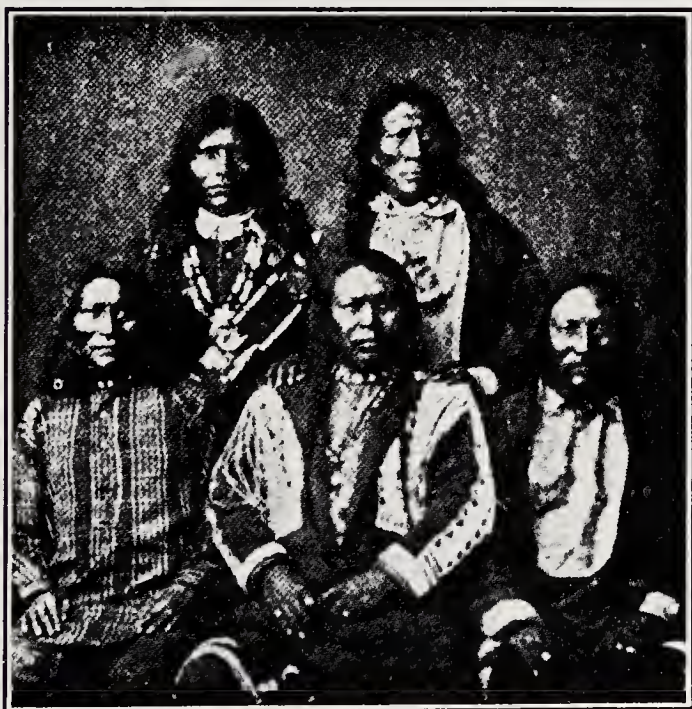
DENVER ART MUSEUM

DENVER, COLORADO

Department of Indian Art

NORMAN FEDER

Curator



GROUP OF UTE MEN (Ouray, Seated, in Middle)

Leaflet No. 10
1930

THE UTE INDIANS

LOCATION. The Ute Indians belong to the Shoshonean linguistic family. At the present time they are located as follows. The Wiminuche, Capote and Moache bands live on the Southern Ute Reservation and adjoining allotted lands in the southwest corner of Colorado. They number about 900. The Uinta, Uncompahgre and White River bands live on the Uinta Reservation and adjoining allotted lands in northeastern Utah. They number about 1,200. The total number of Utes is about 2,100.

HISTORY. The tribe, which was divided into seven principal bands, formerly roamed the entire central and western portions of Colorado and the eastern portion of Utah, including the eastern part of the Salt Lake and Utah valleys. To the south they extended into northern New Mexico. In Colorado their favorite haunts were the great central parks and the region about Colorado Springs. The Spanish in New Mexico and the early 19th century American explorers were the first whites with whom they came in contact. Beginning in 1849 a long series of treaties were made with the Americans, setting aside various reservations in Colorado and Utah. In 1880 the present reservations were established. In 1899 the eastern half of the Southern Ute Reservation was allotted to the Indians, the other half being left intact and forming the Southern Ute Reservation of today. On it lives the Wiminuche band, in general the most conservative group of the tribe. Much of the Uinta reservation has also been allotted.

Aside from the Meeker massacre in 1879, when the Indian Agent and a number of other whites were killed, the tribe remained on good terms with the whites, though there were a number of small conflicts with the early settlers. In 1906 a large group of the Utah Utes left the reservation, but they were persuaded to return without fighting.

The tribe produced one preeminently great Indian, the chief Ouray (1820-1880) and one of almost as fine a type, the chief Ignacio. During the latter part of his life Ouray was the chief of all the Utes and used all his unusual gifts to solve without bloodshed the problems caused by the advent of the white man.

PHYSIQUE. A very noticeable shortness of stature and a strong tendency to obesity are the principal physical characteristics of the Utes.

DWELLINGS. Originally the Utes lived in tepees of skin, or in small brush shelters, using the latter especially in the summer. Later the skin tepees were replaced by those of canvas, and these in turn are tending to give place to cabins of wood or stone. For details of these dwellings see Indian Leaflet No. 9.

CLOTHING. In former times deer and elkskins were made into shirts and leggings for the men, and ankle length dresses for the women. In warm weather the men wore only a breech cloth and the women a short kilt or skirt of shredded bark or buckskin. Ankle and knee length moccasins were worn by both sexes. For warmth, robes of elkskin, blankets woven from rabbit skins and Navaho blankets were worn. Except for the basket caps once worn by the women and various sorts of ceremonial paraphernalia no head covering was worn.

Nowadays both sexes wear American clothes to a very large extent, the women's calico dresses being cut along the lines of the old buckskin garments. The women are very fond of wide belts, usually made of leather. Colored flannel, called squawcloth, is still used in the making of dresses and hip-length leggings. Both sexes are fond of jewelry and other bright ornaments.

FOOD SUPPLY. The Utes were primarily a hunting tribe, so game of all sorts formed a very large part of their diet. The meat was either broiled or roasted when fresh, or jerked by drying in the sun. Chokecherries, mesquite beans, yucca fruit, wild berries of many kinds, grass seeds, dried grasshoppers and pinyon nuts were also important as foods. The seeds were ground into flour on metates, or flat hand grind stones, or in mortars of soapstone. Fish was eaten when obtainable.

The Utes are now turning more and more to agriculture and stock raising, especially those living on the allotted lands about Ignacio, Colorado and near the Uinta reservation. This tendency, coupled with the presence of the trading post with its stocks of all sorts of manufactured foods, have made the use of the old native foods less and less common.

SKIN DRESSING AND BEADWORK. The Utes have long been known as the makers of fine beadwork, most of their leather articles being decorated in this manner. The skins are prepared and the beads sewn on as described in Indian Leaflet No. 2. Ute beadwork cannot be identified by any easily described characteristics, a fondness for light green, light blue, and yellow beads being one of the few guiding signs. Beadwork is still made by them, but both the quantity and quality is diminishing.

BASKETRY. Rather primitive, coarsely woven and coiled willow baskets were made to a limited extent. The pitch covered water bottle with a large body and a narrow neck was the most common shape. Other forms were conical burden baskets, bowls, harvesting fans and women's caps.

POTTERY. Rough, undecorated and poorly shaped pottery was produced in limited quantities. Cook pots and pottery drums were the common varieties. Before the coming of the whites most pottery cooking utensils were obtained by trading from the Pueblos and the Jicarilla Apaches.

PAINTING. Crude human, animal and symbolic figures were painted in colors on hide and cloth articles, and on the rocks near their camps. Most of the paintings on hide and cloth were descriptive of dances, and those painted or cut into the rocks were hunting and battle scenes, maps, and pictures intended to bring good luck to travelers, warriors and hunters.

GAMES. In the old days the principal games were those involving the use of dice and various forms of gambling sticks; hoop and pole; ball juggling; double ball and shinny. Horse and foot racing have always been in favor. Modern card games, especially three card monte and poker, have been learned from the Mexicans and Americans and are now played extensively. Gambling is very common and heavy, the women being especially addicted to it.

CUSTOMS. Marriage was a matter of barter, though the woman had the right to refuse. Divorce was easy, being arranged by the return of the price originally paid for the bride. Polygamy was practised, but is now much less common. Marriage was exogamous, or out of the clan. Descent was through the father. The dead were buried as quickly as possible, very often in secret holes in the rocks. All possessions of the dead person were burned, and the survivors kept a year's period of mourning.

Before the influence of white civilization was felt labor was evenly divided, the man having the hard and often dangerous tasks of obtaining food by hunting, and of protecting his family from the ever present danger of enemies. The women did all the work about the camps.

There was little idea of distributing the food supply evenly throughout the year. When there was plenty to eat the people gorged, and when food was low they lived on starvation rations. Improvidence was common in all their activities.

In their primitive state their morals were very strict, theft, adultery, etc., being severely punished. After contact with the whites, however, they tended to become much more lax.

DANCES AND MUSIC. The Utes had many ceremonies involving dancing, the Bear and Sun dances being the most important. The former, always held in the spring, was especially characteristic of the tribe. It is still performed. Dragging Feet, Turkey, Scalp, Tea, Double, Lame, and Dog are the names of other dances performed at various times through the year.

The Utes have many songs of all types. They accompany them with large and small drums, flutes, and moraches, the latter being notched sticks which are held firmly against a drum or similar resonator and rubbed with another stick.

TRIBAL ORGANIZATION. Throughout most of their history the Utes have not been a united tribe, but have been divided up into independent bands, each with its own head chief. The chief Taiwi, or Tabby, at one time was the leader of most of the tribe, and Ouray was acknowledged as the supreme chief of all the Utes. Other leaders from time to time succeeded in amalgamating several of the bands into a confederacy. Important questions were decided by a meeting of many chiefs. The tribe was also divided into clans.

RELIGION. The Utes worshipped a bi-sexual power, the He-She, represented by the sun. This power was the creator of everything. In addition to this deity they believed in many hero and animal gods, the latter being the progenitors of the present animals. There were many legends of the powers and feats of these creatures, and the Indians made every effort to win their favor through the acts of the medicine men and by means of many small acts of individual magic.

The medicine men were very powerful and even today their influence is strong amongst the older Indians. In addition to acting as religious leaders they were the healers of the tribe, relying on spells, charms and their knowledge of the medicinal value of native plants to effect their cures. They were quite skilled in the setting of bones and the curing of arrow and bullet wounds. Christianity has made very little progress among the Utes.

Compiled from the following sources by Jean Allard Jeançon and F. H. Douglas:

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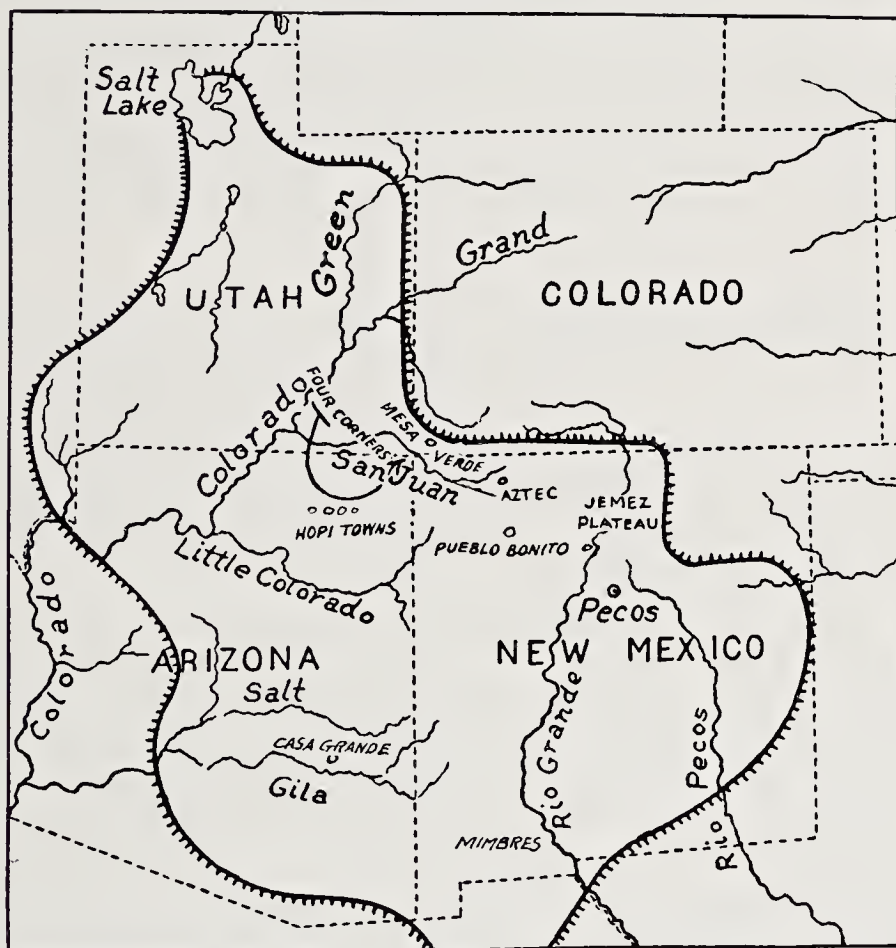
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DEPARTMENT OF INDIAN ART

NORMAN FEDER

Curator



Approximate extent of the Southwestern Culture area adapted from Kidder's "Southwestern Archaeology."

LEAFLET 11

1930

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PERIODS OF
PUEBLO CULTURE AND HISTORY

1. THE BASKET-MAKER-PUEBLO (ANASAZI) (Ah-nah-sáh-zee) INDIAN CULTURE has existed since sometime before the Christian era in much of Arizona, New Mexico, Utah, western Colorado and perhaps southern Nevada and northern Chihuahua, Mexico. Most of this area is a high, rough plateau interspersed with various ranges of mountains and drained by four river systems, those of the San Juan, Colorado, Rio Grande and Gila-Salt. The rainfall is scanty and most of the country is desert. There are, however, conifers on the mountains and a number of rather fertile valleys. Semi-nomadic at first, the Anasazi very early became a farming people, settled in stone or adobe towns and producing much pottery, basketry and cloth. The modern Pueblo Indians of northern New Mexico and northeast Arizona are their descendants. The name "Cliff Dwellers" is often applied to these people. Many other kinds of Indians have shared the Southwest with the Anasazi at all periods, but there is no space to discuss them here. (See reference 16).

2. ANASAZI HISTORY has been quite fully worked out by excavations of ruins and by other scientific investigations conducted by archeologists (students of ancient human life). For convenience this span of history has been divided into 8 periods: Basketmaker 1, 2 and 3; and Pueblo 1, 2, 3, 4 and 5. This classification, first well established about 1930, has since been rearranged as follows:

| | | |
|---------------------------|-------------|-----------------------|
| Basketmaker 1—Omitted | Pueblo 1 } | —Developmental Pueblo |
| Basketmaker 2—Basketmaker | Pueblo 2 } | |
| Basketmaker 3—Modified | Pueblo 3— { | Great Pueblo |
| Basketmaker | | Regressive Pueblo |
| | Pueblo 4— | Renaissance Pueblo |
| | Pueblo 5— | Historic Pueblo |

Each of these periods can be distinguished by clearly marked kinds of pottery or other manufactures, types of buildings, details of food and costume and so on. The total of all these details and others make up the "culture" or way of living of the people.

3. THE TREE RING CALENDAR makes it possible to date these periods and details of life quite accurately, see reference 13. While exact dates for many individual ruins can be given, the dates for the separate periods are only approximations. These periods are not separated from each other like the layers of a cake but merge together imperceptibly. Furthermore their times vary considerably in different parts of the Southwest. Pueblo history is a story of continuous development. All that this leaflet and the culture period system can do is to indicate certain high spots and important aspects of that story.

4. BASKETMAKER 1 is a theoretical period established because the state of civilization in Basketmaker 2 is sufficiently advanced to indicate that something must have gone before. No Basketmaker 1 remains have been found and positively recognized. All that can be said is that the first Basketmakers were long-skulled wandering people who could make stone tools, fit them with wooden handles to produce weapons, dress skins for clothing, and weave various kinds of baskets and fibre bags. The period runs from some unknown time in the past to about the beginning of the Christian era or slightly later. These people are called "Basketmaker" because of their skill in basketmaking, evidence of which is so abundant in the Basketmaker 2 period.

5. BASKETMAKER 2 begins about the time of Christ and runs up to about 450 to 500 A.D. Many remains of these people have been found in the absolutely dry caves of the greater Southwest. They were mostly a long-headed, semi-nomadic people, rarely with fixed homes, who buried their dead rather elaborately in caves. They grew corn and pumpkins and possibly beans,

and hunted with the atlatl or spearthrower instead of the bow and arrow. They made no pottery but excelled at making baskets. They wore practically no clothing, but had finely made sandals, wore their hair in elaborate arrangements (men only) and had many shell and bead ornaments. Fur cloth and animal skin robes were worn. Food and other things were stored in rather small slab-lined pits or cysts in cave floors.

6. BASKETMAKER 3 runs from around 500 A.D. to something like 750. It was best developed in the Four Corners region where Colorado, Utah, Arizona and New Mexico meet. Pottery first appears toward the beginning of the period, first crude dried mud vessels, then true fired pottery with designs borrowed from basketry. The bow and arrow, more efficient than the atlatl, also first appear. The people lived in pit houses; round or squarish dwellings partly sunk in the ground, with a roof of timbers and earth supported by upright posts. More kinds of corn were grown, and beans were certainly used. Sandal weaving and basket making reached their summits, but fibre bag weaving degenerated. Sandals had scalloped to rounded toes instead of square, as in the preceding period. Turkeys became domesticated and their feathers were worked into cords to make robes. Turquoise beads came into use, as did good stone hammers and axes. Basket and sandal designs were very elaborate, with much red added to the black of the earlier period.

7. PUEBLO 1 700-750 to around 900 A.D. Graves of the period contain increasing numbers of round-headed people as opposed to the earlier predominance of long-heads. Most of the skulls are artificially flattened on the back because of the change from the soft cradle to a hard one. Presumably these round-headed people came from somewhere else, but the whole matter is uncertain. The typical Pueblo 1 village contained a crescent-shaped line of connected rooms above ground, the ancestor of the great stone houses of later times. The walls were of upright posts covered with mud, and there was a timber and earth roof supported by posts. Before this period ended the original one-room dwelling of Basketmaker 3 had completed its development into the subterranean kiva (kee-vah), or exclusively ceremonial chamber, that was to survive through all Pueblo history. Pottery developed rapidly and the use of coiled basketry declined. Unsmoothed coils on vessel necks form a distinctive feature of the pottery. Plaited yucca ring baskets and rush mats appear. More important than either was the invention or introduction of weaving cotton cloth on a loom. This was certainly done by 850 A.D. and apparently earlier.

8. PUEBLO 2 is a rather vague period in both time and space. That is, the time of its existence varies from region to region, and in some areas it does not exist at all. It can be best explained as a transition, during the nine and ten hundreds A.D., from primitive Pueblo 1 to classic Pueblo 3. Perhaps the outstanding feature of the period is the use of stone or mud bricks for building homes rather than the earlier logs and earth. Masonry houses of several rooms in a single block, with a circular underground room nearby, are typical of the period. Pottery was made in great quantities and with several distinctive features. Of these the most important was the use of fine unsmoothed coils decorated with regular indentations made with the thumb and finger. Little is known of other features of life. It seems sure that fur and feather string blankets were made; that coiled basketry decreased but was fine in weave; that twined fibre weaving died out in favor of loom woven cotton; and that finely woven cord sandals were largely replaced by coarse ones made of plaited yucca leaves.

9. PUEBLO 3 is the Great Period, the time when Pueblo culture reached its fullest development and when the huge, many-roomed stone pueblos filled great cliff caves or towered high on mesas or valley floors. The period runs from about 1050 to 1300 A.D. The culture was at flood tide about 1250. From then on various things, notably the great drought which ended about 1300, caused a decline and the abandonment of many populous sites. Difficulties with sanitation and raids from warlike invaders appear to have been destructive factors also. All of the arts flourished and produced a wealth of forms. Many mural paintings recently recovered from excavated kivas indicate that a rich and varied ceremonial life existed, with much distinctive costuming and ritual equipment. Corn, beans, pumpkins and meat were the foods, as in previous periods.

There were several main centers, each with its own characteristic kinds of pottery, architecture and so on. Mesa Verde in southwest Colorado, Chaco Canyon in northwest New Mexico, and the Kayenta region in northeast Arizona were the most important of these centers.

10. PUEBLO 4 is usually dated from 1350 to 1700 A.D. The decadence of late Pueblo 3 times continued and was greatly speeded up by the arrival of the Spanish in 1540. It should be noted, however, that the Spanish were not primarily responsible for the breakdown of Pueblo life as has sometimes been stated, but were in many ways beneficial to the country, see Reference 17. In Pueblo 4 times the main centers of the previous period were largely abandoned in favor of new sites where large pueblos were again built. These, however, were mostly built on valley floors and the like rather than in caves and on cliffs. Pecos, near Santa Fe, N. M., is a good example. Life in general was about like that of Pueblo 3. In pottery an innovation in the form of glaze paint for designs was widespread, especially in the upper Rio Grande valley. All-over glazing has never been done by the Pueblos. What is often called glaze is only a polish produced by rubbing with a smooth stone.

The coming of the Spanish produced profound changes in Pueblo life. Domestic animals, new foods and tools, architectural idea and all sorts of manufactured goods were introduced. Christianity had a widespread but superficial effect, and political and military controls were set up. The last dying kick of the old native civilization was the revolt of 1680 which, after temporary success, ended with complete Spanish reconquest by 1700.

11. PUEBLO 5 runs from 1700 till today. In this period the population was concentrated in towns still in existence. The changes which began with the Spanish were accentuated by those introduced by Americans. Many of the old crafts died out, but quite a number survived, though usually in changed forms. The modern painted potteries replaced the older wares. Weaving declined greatly and had practically disappeared except among the Hopi and Zuni by 1885. The same is true of basket-making. Native societies, both secret and social; the old system of government by priests of the native religion; and the religion itself have persisted to a considerable extent, though overlaid with White ideas and customs. The present pueblos are listed in Leaflets 45-46.

Text by F. H. Douglas, with many suggestions by Earl Morris and Robert Burgh. The literature on the subject is immense. The following works are useful for a general survey:

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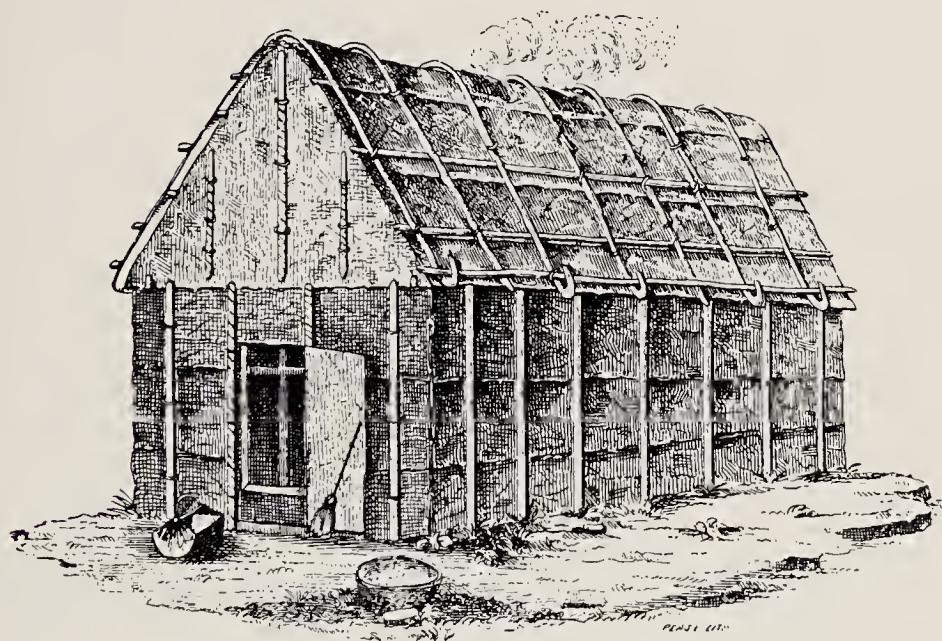
DENVER ART MUSEUM

DENVER, COLORADO

Department of Indian Art

RICHARD G. CONN, CURATOR

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An Iroquois Bark House, identical with the Long House
except as to its length.

Leaflet No. 12
1930

3rd Printing, March, 1956

THE IROQUOIS LONG HOUSE

THE IROQUOIS: LOCATION AND HISTORY. The name Iroquois is generally applied to the five, later six, tribes of the Iroquoian linguistic stock who were found by the whites living in what is now northern and western New York state and in nearby territory. The Five Nations were Mohawks, Oneidas, Onondagas, Cayugas and Senecas. In 1715 the Tuscaroras came up from North Carolina and were admitted to the League. About 1570, though possibly earlier, these tribes formed the political organization known in history as the League of the Iroquois. About 1600 they came in contact with the Dutch on the Hudson and obtained firearms from them. Thus armed, as were none or but few of the neighboring Indians, they began a career of conquest by war and diplomacy which by 1700 had made them masters of all the Indian tribes in New York, Delaware, Maryland, New Jersey, Pennsylvania, northwest Virginia, Ohio, Kentucky, northern Tennessee, the western portions of Illinois, Indiana and Michigan, southeastern New England and much of eastern Canada. After 1700 the power of the League began to decline. In the wars between France and England they always supported the latter power. When the American Revolution broke out the League was unable to decide what policy to follow, and so, in 1777, its member tribes decided to support the Americans or English according to the wish of each tribe. All but the Oneida and about half of the Tuscarora joined the English. For all practical purposes this was the end of the League, though ever since some of its ceremonies and organization have been kept up.

At the end of the revolution the tribes which had followed the English were settled in Ontario. The Oneidas gradually yielded to the western push of the white settlers and for some years drifted into Wisconsin. In 1838 they were assigned a reservation near Green Bay. The remaining tribes were settled on reservations in western New York.

POPULATION. At the time of their greatest power the Five Nations numbered between twenty-five and thirty thousand. At present the population is about 16,000, located on 7 reservations in New York, 7 in Ontario and Quebec and on one in Wisconsin. There are a good many others scattered about the United States. This population is increasing on the whole, though some of the bands are diminishing.

THE LONG HOUSE. The Iroquois were an agricultural people living in permanent villages of community houses, surrounded by corn fields and often protected from attack by log palisades. These community buildings were called Long Houses. The Iroquois name was "hodenosote." From this word came the name "Hodenosaunee" by which the League was known to the world and to its members. The Long House went out of existence at the end of the 18th century.

DIMENSIONS. The Long Houses ranged in length from fifty to one hundred and fifty feet. In width they were from fifteen to twenty-five feet and in height—to the ridge-pole—fifteen to twenty feet. The average house was about 60 by 18 by 18. Often the houses were made for a single family and were then only about 20 feet long. This small form was called "ganosote," bark house.

CONSTRUCTION; FRAMEWORK. Logs with forked tops were set in the ground in a rectangle the size of the building to be constructed. The logs were 4 to 5 feet apart and the tops of the logs were about 10 feet above ground. These upright poles were tied together by cross beams, running both around the rectangle and across it.

ROOF BEAMS. The roof was not formed with a ridge-pole and rafters, such as we use today, but by bending a number of slender flexible poles in a series of rather pointed arches. The curve of the poles had to be quite steep in order to enable them to bear the weight of the heavy snow. A roof frame made this way looked the same as one made by a white carpenter except for the absence of the ridge-pole.

SIDING AND ROOFING. The framework thus put together was covered with rows of sections of bark, overlapping like shingles. To obtain these large bark shingles elm or ash trees were killed by girdling when the sap was rising. The sections of bark stripped off in this manner were cut into lengths of about 6 feet, being several feet wide. The rough outer surface of the bark having been removed, the shingles were stacked up in piles to dry, care being taken that they should not warp.

The shingles were tied to the walls and roof of the building in overlapping rows. On the sides the grain of the bark ran parallel to the ground and on the roof it was laid at right angles. The bark was tied to the poles of the framework with splints or bark rope. After it was tied in place a series of poles was set up outside the bark shingling, corresponding with the poles of the frame work, and was tied to the first set of poles, thus binding the bark more firmly in place. Similarly poles were curved over the roof atop the bark directly over the inside rafters. The ends of these poles were curved up at the line of the eaves. Several rows of poles were in turn laid at right angles to the first set and firmly tied in place.

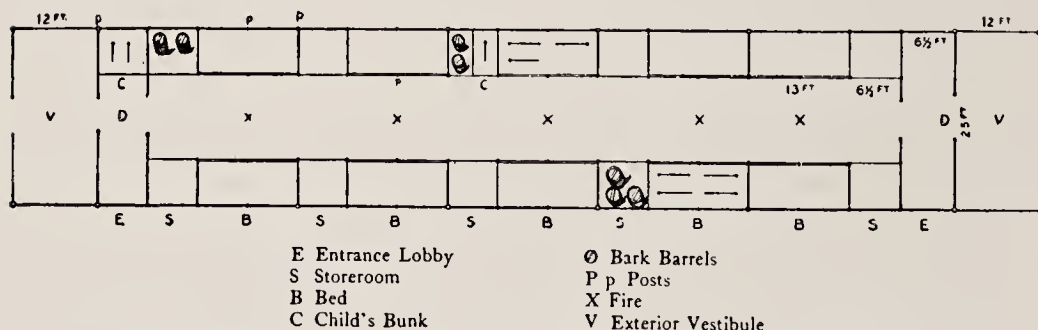
OPENINGS. The Long House had no windows. At each end there was a door, made of bark boards hung on wooden hinges or of animal skins hung over the opening. In the roof, along the ridge, was cut a series of square openings, designed to admit light and to permit the escape of smoke, which ascended to these openings from the fires below without the aid of any chimney. The smoke holes could be partially or entirely closed against wind and rain by pieces of bark on top of the roof. They were controlled from within by pushing with a long pole.

INTERIOR ARRANGEMENTS. At each end of the building was a vestibule 10 to 15 feet long and running across the building. These rooms were used for storage and as meeting places for the inhabitants of the house. In summer the bark sides were removed, thus making the vestibules into porches. Next to the vestibules were small rooms for storage. The remaining space was divided into a series of booths built along both sides of the room. A central alleyway ran the whole length of this space. The partitions forming the booths extended about 6 feet out into the room. The booths were of two sizes. One, about 6 feet wide, was used for storage and was equipped

with cupboards and shelves. The other, about 13 feet wide, was used as the living quarters of one family. If the family was large two adjoining booths were assigned to it. In each booth there was a platform of bark boards, about a foot high and filling up the entire floor space of the booth. Fastened against the wall was another platform, about five feet above the lower one and not quite so wide. These two platforms served for the living and sleeping accommodations of one ordinary family, or for part of a large one. Sometimes small bunks for children were built in the storage booths. The platforms were covered with reed mats and animal skins. The cooking utensils, clothes, hunting equipment and other possessions of the family were stowed away in the booths wherever there was room for them. Food was kept in barrels of bark in the adjoining storage booths and on platforms built on the rafters. Corn was hung in large masses from the rafters. These masses were made by braiding the husks of the ears together.

FIRES. The fires were made in rough stone fireplaces along the central alleyway. There was a fire for each pair of booths. Wood for the fires was piled in the storage booths and in the end vestibules. While the smoke was supposed to escape through the holes in the roof, a great deal of it remained in the building, so that the long room was always unpleasantly smoky. The Indians avoided the smoke by sitting or reclining on the bark platforms as much as possible. The fires kept the houses comfortably warm in all but exceptionally cold weather, when the combination of the cold and the smoke from the extra large fires must have made the Long Houses rather uncomfortable living quarters.

FIVE-FIRE LONG HOUSE, AFTER LAFITAU'S DESCRIPTION



The single interior line shows the upper shelf running the whole length of the house proper. The second line shows the lower shelf used as a bed. The unit of measurement is the length required for a sleeping man, 6 feet or a trifle more.

Compiled from the following sources by F. H. Douglas:

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DENVER ART MUSEUM

DENVER, COLORADO

Department of Indian Art

NORMAN FEDER

Curator



THE HOPI VILLAGE OF WALPI

Leaflet No. 13
1930

THE HOPI INDIANS

LOCATION AND HISTORY. The Hopi Indians are a sedentary agricultural people of Shoshonean stock living in twelve pueblos or villages in north central Arizona. The country is rough, quite barren desert. Eight pueblos are located on three mesas about 75 miles north of Winslow, and the ninth, called Moenkopie, is about 60 miles west of these. The mesa villages are: first mesa, Sichomovi and Walpi; second mesa, Shung-opovi Shipaulovi and Mishongnovi; third mesa, Oraibi, Hotevilla and Bacabi. The population on the reservation is about 3,200, above 95 per cent full-blood. Several hundred other Hopis are scattered through the country. The population is increasing. On the first mesa is a village of Tewa people called Hano. The name Moki or Moqui was almost universally applied to the Hopi until quite recently. It is a derogatory expression much disliked by them. There are now 2 towns below first and third mesas.

The Hopi have lived in this immediate locality for many centuries. They were first seen in 1540 by the Spanish under Tobar and Cardenas. But two other expeditions reached them before 1629, when missionary work was begun. It lasted till the Pueblo revolt of 1680. The attempted return of the missionaries in 1700 ended in the destruction of the pueblo of Awatobi by the other villagers and in the final stopping of missionary work. Until the coming of the Americans in the middle of the last century the Hopi were almost unmolested by the whites, and even today they are little visited.

PHYSIQUE. The Hopi are noticeably small in stature and practise head flattening to a considerable extent. Their expression is usually gentle and pleasant. The women especially tend to corpulence. They have the reddish-brown skin and black hair common to the Indian race. The proportion of albinos is large.

HOUSES. The dwellings of the Hopi are all of the pueblo type described in Leaflet No. 9. They are built of unplastered courses of roughly cut stone. Today a number of individual houses are being built at the bases of the first and third mesas. .

CLOTHING. The men wore a head cloth, calico shirt, wide cotton trousers slit up the sides, a breech cloth and moccasins. The women used to wear a black or dark blue blanket wrapped about the body and fastened over one shoulder and down the side. A woven sash is worn around the waist. Moccasins of several types are worn. Nowadays both sexes tend to wear American clothes except in the conservative village of Hotevilla and on ceremonial occasions. For further details see Leaflet No. 4.

AGRICULTURE AND FOOD. Centuries of experience have taught the Hopi how to raise corn and other food plants in the desert. The fields are usually far from the mesas. The men run miles to and from work. Corn is the principal crop. Some is saved each year against famine and the rest is eaten or traded for wheat. The squash and beans of an earlier day are now supplemented by most common garden vegetables. Peaches and melons are extensively raised. Many desert plants were formerly used for food. All the game which lived and still lives in the region supplied small amounts of meat. Meat comes today from domesticated animals. Most American foods are bought at the trading stores. For further details see Leaflet No. 8.

POTTERY. The Hopi pottery craft is very old. The earliest wares were black on white. They evolved into a polychrome type reaching its height in the late 16th century. It is called by some the finest Indian

pottery. The ware deteriorated until the late 19th century, when the Tewa potter Nampeyo, from Hano, studied the old wares and designs and caused a revival of fine work. Today large quantities of excellent ware are made for sale, principally on the first mesa.

The modern ware has either a red background or one shading from white through yellow to orange. Decorations are in black, red and white. Beautifully drawn conventionalizations of life forms are the common designs. Shallow bowls are the most characteristic form. Jars of many sizes, ceremonial vessels, canteens and flat tiles are also made.

BASKETRY. Three types of baskets are or have been made. The industry is flourishing today. On the third mesa wicker baskets are woven. The commonest shape is the flat plaque. Bowls and deep shapes are also made. Bright vegetable dyes of many colors are used to make a large variety of designs, using life and geometrical design elements. On the second mesa the baskets are made of thick sewn yucca coils. Colors are less varied than on the third mesa, but the designs and shapes are similar. Rather coarsely made shallow work bowls of plaited yucca are made in all the mesas. Formerly water bottles of coiled work were made.

WEAVING. The Spanish found the Hopi weaving cloth from the native cotton and this type of work is still done. The white cotton is woven into shawls, sashes and kilts and ornamented with colored wool embroidery. The weaving of woolen fabrics was taken up after the introduction of sheep by the Spanish and is still practised. Narrow transverse stripes and a lack of elaborate patterns are characteristic of Hopi blankets. All weaving is done by the men. The art is very alive today.

KACHINA DOLLS. During the first six months of the year the men carve small wooden figures representing the different kachinas. These mythical beings are ancestor gods, culture heroes, and both human and animal demigods; and are represented by masked dancers properly costumed. The dolls are carved and painted to resemble these dancers.

The dolls are given to little girls, especially at the Powamu ceremony in February, which celebrates the return of the kachinas to earth. The children believe the dolls are made by the kachinas. Small bows and arrows, etc., are given the boys at the same time.

GAMES. Several games were played as part of ceremonies. Other common games were: archery, ball racing, dice, double ball, hidden ball, hoop and pole, shinny, foot racing and nowadays cards, pool, etc. Beanshooters, buzzers, cats cradle, stilts and tops are common toys. Fewkes says the Hopi are much freer from gambling than most Indians.

CUSTOMS. There are elaborate birth ceremonies. Marriage is arranged by a go-between, with the girl having the final word. The husband and his male relatives weave the trousseau. The newly married pair live with the bride's parents for the first year. Polygamy is not practised. The dead are buried as soon as possible in holes and cracks in the rocks. They are wrapped in blankets and are buried with food and pottery. Descent is through the mother. The women own the houses and what they contain and the men the things outside, including the crops. The people are very peaceful and hospitable. They are very shrewd traders and businessmen.

MUSIC. The Hopi are notably musical. They do not confine themselves to old traditional songs, but are constantly composing new ones. Their elaborate ceremonies call for a very large number of songs. Besides

these they have large numbers of non-religious songs. Their instruments are the flute, the morache or notched resonator and many kinds of rattles and drums.

SOCIAL ORGANIZATION. The Hopi are divided up into groups called phratries, which are in turn split up into clans, each one having its own ceremonies and legends. From the clan members religious fraternities are made up. The tribe is governed by a council of hereditary clan elders and the chiefs of the religious societies. There is no supreme chief of all the Hopi. Each town has a chief who acts somewhat like a mayor, having charge of communal work and order. Crime is practically unknown.

RELIGION. The Hopi believe in many gods, the Sun, Moon, Earth and Sky, being the principal ones. They believe in a future life. There is no general conception of one Great Spirit, though an occasional individual has a vague idea of such a being. Ancestor worship is important. The lesser supernatural beings, or kachinas are innumerable. They act as intermediaries between gods and men, spending half of their time with each. All the gods are supposed to influence rainfall and crops. All religious practises are based on fertility rites relative to the struggle with nature for food.

CEREMONIAL PRACTISES. The Hopi have the most elaborate and frequent ceremonies now practised by the American Indians. Their long isolation has kept them intact until very recently, when a growing use of modern purchasable foods has removed the need for rain and fertility rites.

Their ceremonies are of two types: those taking place in public, usually dances, and those held in the underground ceremonial rooms called kivas. The second type consist of the acting out of dramas based on legends and supplemented with elaborate ritualistic observances. Prayers, songs and incantations are performed by costumed men before complicated altars, screens and sand paintings. The ritual is extraordinarily complex and the paraphernalia used is very extensive. Most ceremonies last nine days, the public portion being on the last day. Thus the famous Snake Dance is the public performance held on the ninth day of a ceremony performed to bring rain for the maturing of crops.

Compiled from the following sources by Jean Allard Jeançon and F. H. Douglas:

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AMERICAN MUSEUM OF NATURAL HISTORY

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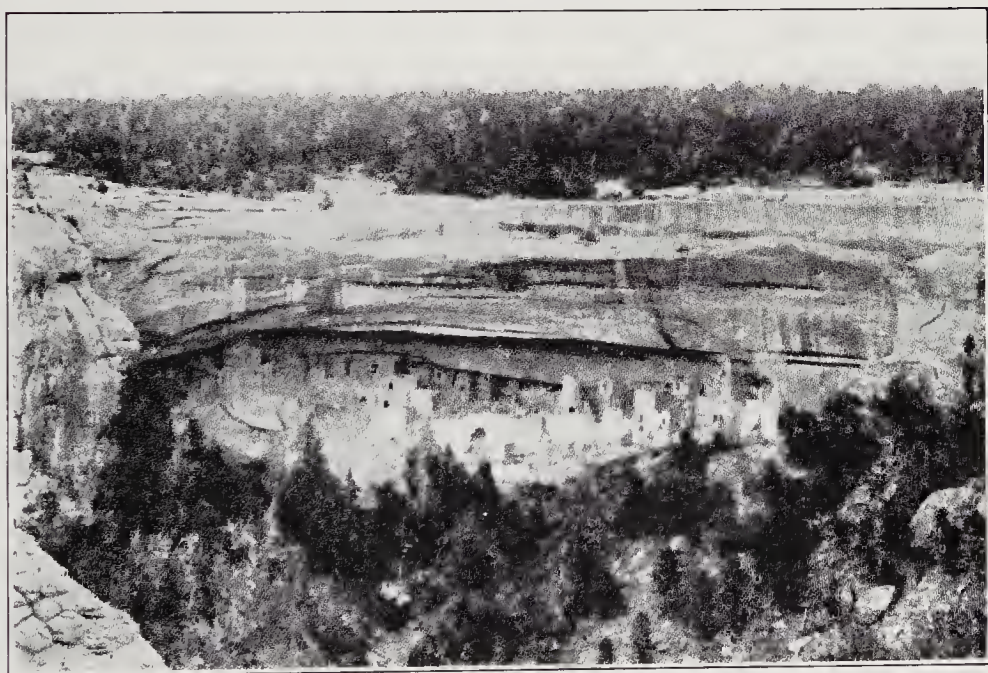
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CLIFF PALACE, MESA VERDE

Leaflet No. 14
1930

THE PUEBLO GOLDEN AGE

DATES AND LOCATIONS. The prehistoric pueblo culture reached its height in a period running from about 1050 to 1250 A.D. This is often called the Golden or Classic Age. Amongst the best examples of the towns of this age are Cliff Palace, Spruce Tree House, Sun Temple and the Far View Group of Mesa Verde; Yucca House and the Montezuma Valley ruins in southwestern Colorado; the Aztec ruin in northern New Mexico; Betatakin and Keet Seel in northern Arizona; Pueblo Bonito and the other ruins in the Chaco Valley of New Mexico.

ARCHITECTURE. In the Golden Age the tendency of the southwestern sedentary peoples to gather together into large communal houses reached its height. In caves, on mesa tops and valley floors they erected large buildings rising several stories in height and containing great masses of cell-like rooms. The buildings were terraced, the lowest floor having the largest area. The buildings in the caves, being well protected by the cave walls, were more spread out and roomy than those in the open.

The walls were built of beautifully dressed stones set in adobe. The bottom story walls had no openings, but the upper stories, which were reached by ladders stretching from terrace to terrace, had very well squared openings. The doors were small and rectangular, though sometimes T-shaped. They were closed with a slab of stone or with hides or reed mats. The windows were not glazed, even with selenite. The lower story was for storage, the living rooms being on the upper floors. The rooms ranged in size from about 4x6 to 10x20 or larger. Their average height was about 7 feet. The walls were plastered with adobe, which was sometimes colored and rarely decorated with painted designs. Roofs and floors were constructed as described in Leaflet No. 9.

The kivas, or clan ceremonial and club rooms for men and boys, apparently reached their highest significance at this time. They were elaborately built circular underground rooms, with log roofs resting on supporting pillars, and ventilated with airshafts entering the room at the bottom of the wall, the inflowing air being kept from the fire by a deflector.

FOOD AND COOKING. Corn, beans, squash and wild seeds, nuts, roots and berries were the vegetable foods used. The flesh of birds, and animals procured by hunting and trapping provided meat. Probably these early peoples used native foods similar to those described in Leaflet No. 8.

Cooking was done over small stone or adobe fireplaces located in the plazas of the pueblos. Food was cooked either by boiling in baked clay pots or by barbecuing or roasting over the open fire.

CLOTHING. In the summer the men wore a gee-string and the women a short apron of grass or shredded bark. It is possible that they also wore body coverings of woven cotton similar in shape to a poncho. During periods of cold or rain they used robes woven from yucca cord and feathers, or made from the well tanned skins of animals. On the feet they wore sandals made of yucca cord.

POTTERY. The form, design and hardness of baked clay products reached their height at this period. The principal forms were mugs, pitchers, dippers, wide shallow bowls, globular small mouthed jars, and bird, animal and eccentric forms. These shapes were made in the

decorated ware and ranged in size from small miniatures to large vessels holding several gallons. For cooking and storage undecorated grey-black jars were made, some showing the coil and others smooth.

The decorated wares had black designs on grey-white or red backgrounds. The designs showed innumerable combinations of rightangled, curved and triangular elements. Conventionalized bird designs were also often used.

BASKETRY was little used. Such specimens as have been found are of two types, those having sewn coils of willow and those made of plaited yucca.

TEXTILES. Cloth was woven from wild cotton or shredded yucca fibre. Colors and designs were used. Fragments of cloth now remaining are too small to permit an accurate statement of their original form. Sheets of matting were woven from yucca. Other mats were made by tying together lengths of reeds or twigs.

STONE ARTICLES. Axes and hammers of different sizes were made from river boulders. They were fastened to wooden handles. From agate, petrified wood, chalcedony, obsidian and occasionally lime-sandstone and lignite were made chipped arrow and spear heads. Axes were sharpened by rubbing on sandstone boulders. The deep hollows thus made remain today. Hand mills for grinding corn were made from two pieces of stone. One, called a metate, a flat slab about 18 inches square on the average, was fastened in place on the ground or floor at about a 45 degree angle. The other, the mano, a flat rectangular piece with rounded edges, was held in the hands and rubbed up and down over the fixed stone. Often a mill had several such grinding units.

WOODEN ARTICLES. Long sticks used in planting, scoops and bowls, spear handles and arrow shafts, drills and spindles, bows, weaving battens, war clubs, window and door jams and lintels, house beams, and ladders were the principal articles made from wood. Pines, cedars and other conifers, and scrub oaks provided most of the raw material. Stone implements, perhaps aided by fire, were the means of working the timber into usable shapes.

BONE ARTICLES. The bones of all the birds and animals used for food were carefully cleaned and made into a number of articles. The larger bones were made into hide scrapers, flutes, daggers and dice, while the smaller sizes became eyeless needles, awls and bodkins, hairpins and beads.

WEAPONS. In hunting and war the men depended on bows and arrows, stone-tipped spears, stone knives, wooden clubs and bone dirks.

SOCIAL ORGANIZATION. It is presumed that the social organization of these pueblos was similar to that found by the Spanish on their arrival in the Southwest in 1539, since the Pueblo Indians of that time were undoubtedly descendants of those who lived in the towns of the Golden Age. In each village were a number of clans governed by a religious hierarchy. This group nominated the candidates for civil positions of authority before an election in which all the men of the village participated. Descent was through the female line. Hunting and fighting were done under the direction of an elected war chief. The clan was the unit

of the village group, there being no conception of the family similar to that of the white races of today.

RELIGION. Sun and moon worship and fertility rites probably formed the basis of the religious philosophy of these people. The forms of religion were carried on under the direction of a priestly caste composed of certain men chosen from the membership of the clans and fraternities. The ritualistic observances were probably very elaborate and consisted of dances, both public and private, offerings of meal and other objects, songs, incantations and prayers, held at appropriate seasons of the year both outdoors and in the kivas. The whole scheme of the worship was to control the elements necessary for the growth and maturing of crops.

CUSTOMS. Though there was no family life as we understand it, still each family had its own rooms and individual possessions. The people used the rooms only for storage, shelter and to some extent sleeping. Practically all the active life of the people took place in the community plazas. We have no knowledge of the birth and marriage practices of this age, but presumably they were not unlike those of the descendants.

The dead were buried with the knees bent up on the chest. Usually mortuary offerings of pottery, weapons and turquoise or shell jewelry were placed in the graves. These offerings were in all probability personal belongings. The bodies were wrapped in blankets of feather cloth. Cremation was practised to some extent.

The men's time was occupied with farming, irrigating, hunting, fighting and ceremonial duties. The women were busy with housework, care of children and the making of pottery and other articles.

Compiled from the following sources by Jean Allard Jeançon and F. H. Douglas.

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DENVER ART MUSEUM

DENVER, COLORADO

DEPARTMENT OF INDIAN ART

NORMAN FEDER

Curator



GROUP OF NAVAHO SILVERSMITHS

NAVAHO SILVERSMITHING

LEAFLET No. 15

1930

2nd Printing of the 2nd Edition, September, 1940

1. THE NAVAHO INDIANS are of Athabaskan stock, number about 50,000 and live on a very large reservation lying principally in northeastern Arizona and running over into New Mexico and Utah. They were formerly a rather small tribe of warlike nomads, but in the last sixty years they have increased very rapidly and turned from war to sheep and horse raising, farming and the making of blankets and silver jewelry. For details of their weaving see Leaflets 3 and 59-60.

2. ORIGIN OF SILVERWORK. The Navaho learned silversmithing from the Mexicans, who had long been proficient in that art. Wandering Mexican smiths traveled through the Navaho country, working up the Indians' silver in exchange for horses. About 1850 the Navaho began to do their own work, the first dated reference to silversmithing by a Navaho being November, 1853. The first recognized smith was Atsidi Sani, called Herrero Delgadito by the Mexicans. He learned the art from a Mexican smith taken to the Fort Defiance region by Captain Henry L. Dodge in 1853. It seems certain that the Navahos made no silver jewelry earlier than 1850 because none of the travelers and army officers who visited the Southwest in the forties and earlier make any mention of this type of work, though other activities of the Navaho are fully described. There are several descriptions of the Mexican smiths of the time.

By 1880, when Dr. Washington Matthews lived in the country, the art had so far progressed that a good many men could do a little crude work, but only three or four produced anything elaborate. He says that the work of 1865 was much inferior to that of his time.

Today the industry is a flourishing one. Between two and three hundred smiths are constantly at work producing articles of silver which sell for many thousands annually.

3. FORGE. The early forge consisted of a small rectangular structure of stone or adobe brick, held in place by a wooden frame and filled with clay. In the center of this clay mass, which was five or six inches high and about two feet long, was a basin-like depression on which the fire was built. At the bottom of this basin was a small hole leading through a tube laid in the clay to a nozzle which projected from the back of the forge. This tube was either made of wood lined with clay or molded in the clay itself. At present this clay forge is often replaced by one made from an old tin basin or from a five-gallon oil can with the top and one side removed. Commercial blacksmiths' forges are also used today.

4. BELLOWS. A sack from 10 to 18 inches in diameter and a foot or so long is made from tanned sheepskin. In this sack are placed three or four hoops of willow twigs to keep it distended. One end of the sack is tied to the nozzle projecting from the forge. The other end is nailed to a round wooden disk having two projections. One, the shorter, is on the top and is the handle; the other, on the bottom and somewhat longer, acts as a supporting leg. In the center of the disk is the valve, a round hole covered on the inside by a piece of leather. The bellows is worked by moving the disk back and forth on its supporting leg. Sometimes a bellows is made with two chambers, so constructed that by means of an iron rod connecting the disks one chamber is always open, thus producing a more constant stream of air. Sometimes the forge and bellows are built on a crude four-legged platform.

5. FUEL. Juniper wood is burned to produce the charcoal used as fuel. A large pile of trunks and branches is set on fire in the evening and allowed to burn until it is a mass of hot coals. These coals are smothered with earth and left to cool over night. The charcoal is taken out in the morning.

6. ANVIL. Originally hard flat stones were used for anvils, but later odd pieces of iron came into use, such as pickheads, axe blades, wedges or large bolts. Bolts are driven into logs of wood or short lengths of railroad ties.

7. CRUCIBLES were made of hard baked clay. The early ones were small three sided affairs with rounded bottoms. Later a somewhat larger size was used, much resembling a common water glass. These clay crucibles were not very durable. After being in the fire two or three times they swelled and became porous and, if used longer, fell to pieces. Nowadays commercial crucibles are bought at the trading posts.

8. MOLDS for casting ingots are cut in soft sandstone, soft iron, or hard wood with any sharp bit of iron. Sometimes they are molded in clay. Before the molten metal is poured in the molds they are greased with mutton tallow. Molds are cut as nearly as possible the shape of the finished article. Button molds are usually cut in iron or wood.

9. BLOWPIPE. Modern smiths buy their blowpipes at the stores. The oldtime pipes were made by hammering a piece of thick brass wire into a thin sheet. This was bent into a tube with a curved tapering end. The pipes were about a foot long. The flame used in soldering with a blowpipe comes from a crude wick of twisted cotton rags soaked in tallow.

10. SOLDERING. Borax, saliva and silver dust are combined with very fine wire in soldering. Borax, now bought at the stores, replaces the native alunogen once used.

11. POLISHING. Sandstone, sand mixed with ashes, and buckskin were the early polishing agents. But for the last fifty years sand and emery paper from the trading posts have been used for this purpose, though the first polishing is still done with sandstone or sand and ashes.

12. WHITENING. Silver tarnished by being worked is whitened by boiling the pieces in a solution of either rock salt or alunogen.

13. TOOLS. Tongs and pliers of several kinds, small files, awls, cold-chisels, scissors, vises and stamps are the tools most used. They are all procured from the traders. Dies and stamps are made by the Indians, who file or cut the designs on suitable pieces of metal, usually old files.

14. SILVER. American silver coins provided the metal first used by the smiths. In 1871 Mexican silver dollars were introduced. Both types of coin were later replaced by sheet or ingot silver obtained from the traders. Silver in these latter forms is used today. The differences in color seen in pieces of Navaho silver are due to the different percentages of copper used as alloys. But until extensive laboratory tests have been made nothing can be said as to the colors produced by the different types of alloyed silver.

15. PROCESSES. The silver is worked in two ways. It is either melted in the crucibles and poured into molds approximating the finished shapes, or hammered into thin sheets and cut as desired. Decoration is applied either by chasing with a sharp iron point or by stamping with dies and a hammer.

16. BEAD MAKING. The round hollow beads of the necklaces are made by hammering out silver into a thin sheet. From this sheet small squares are cut with shears. Each one is next placed on a piece of iron having a number of funnel shaped holes cut through it. The silver is put over one of these holes and is then forced into it with a bar of iron having a rounded end. Since the bar is larger than the hole, it cuts the silver off around the rim of the hole. The half globe thus formed is cleared of its rough edges by rubbing with a file or sandstone, and a hole is pierced through its center. When two have been made they are strung on a wire facing each other and the joint is fastened together with finewire and solder.

17. SHAPES. Buttons, beads, bracelets, rings, crescent pendants, crosses, large plates for belts, bridle mountings, wrist guards, earrings, buckles and tweezers were the old native types. Miniature canteens, powder chargers, stickpins, brooches, hatbands, spoons, ash trays, cigarette boxes, forks and knives are not native shapes and have been made at the request of the Americans.

18. ORIGIN OF SHAPES. Fluted wide bracelets, round and triangular bracelets, finger rings, belt plates, and crescent earring shapes are derived from types of silver ornaments made for the Indian trade by American silversmiths in eastern cities. These forms reached the Navaho by trade with the Plains tribes, especially the Ute, Kiowa and Comanche. From the Mexicans came all types of buttons, the globular beads, the crescent pendant, and the beads usually called today by the term squash blossom. This term is a misnomer, for these beads are really pomegranates. The crescent pendant is an ancient European shape which passed from the eastern United States through the southern Plains tribes to Mexico and up to the Navaho.

19. DESIGNS. The early work was decorated with sets of fine lines scratched with a file; rows of dots; squares, diamonds and curving lines engraved with a sharp point. Twisted rods, small superimposed drops and raised ribs, flutes and frets are found on the older work. Stamping with simple hand-made dies was also done. The designs on the stamps were copied direct from those used by the Mexicans in stamping leather. The arrows, swastikas, large birds and similar figures so common today are not native with the Navaho but have been taught to them by dealers and traders. This type of stamp is made by the Indians though the designs are not their own. The designs on silver have no mystic meaning or significance, despite popular opinion to the contrary. Their only purpose is to please the eyes of the maker.

20. SETTINGS. The first work had no stones set in it. In the period 1880 to 1885 the practice of setting silver with turquoise, native garnets, bits of glass, etc. had a small beginning. These early pieces are now very rare. The extensive use of turquoise did not begin until around 1900. The Cerrillos mines near Santa Fe, and various mines in Nevada and Arizona are the sources of turquoise. Most of that used today is from Nevada. Many types of imitation turquoise have been on the market from time to time. The old turquoises were cut by the Indians themselves and are somewhat irregular in shape and not brilliantly polished. At present commercially cut and polished stones are largely used.

Navaho silver work very generally shows less turquoise setting than that produced at Zuni pueblo. Pieces with elaborate turquoise settings and not decorated by stamping are usually from Zuni.

21. IMITATIONS. Navaho silver is one of the few Indian products of which imitations are made by the whites. Government action in recent years has helped to keep down much of this faking. The best silver made today shows a government stamp "U. S. Navaho".

22. COPPER AND BRASS were used for jewelry before silver came into use. But rings and bracelets of copper are not necessarily old, since they are being made again now. Some work showing silver inlaid on copper or vice versa was also made.

Compiled from the following sources by F. H. Douglas:

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APACHE MAN AND WOMAN

Leaflet No. 16
1930

THE APACHE INDIANS

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THE APACHE INDIANS belong to the Athabaskan linguistic stock and are the southernmost members of that family. At present they number about 7,000 and are increasing. The percentage of full bloods is high. They are now located on several reservations in Arizona and New Mexico. In east central Arizona are the San Carlos and Fort Apache reservations, which touch each other and form one large unit. On it live about 5,250 members of the many bands of the western Apache. On the Camp Verde reservation, lying to the west, are about 300 Tonto Apache. In south central New Mexico are the Mescalero, about 450, Geronimo's Chiricahua band of about 250, returned there from their imprisonment at Fort Sill, Oklahoma, and a few dozen Lipan Apache. In northwestern New Mexico is the reservation of the Jicarilla band, numbering about 650. There are possibly several hundred more scattered about on the various southwestern reservations. The bands are named from their geographical location or for some characteristic or industry. The tribes called Kiowa-Apache, Yuma-Apache and Mohave-Apache are not members of the Apache tribe, despite the name commonly given them.

HISTORY. Students of the tribe believe that the Apache came into the southwest sometime prior to the appearance of the Navahos in the late fifteenth century. Until the middle of the 16th century they seem to have been a small, unimportant group. But by adopting whole groups of neighboring Indians into their membership they increased, and after splitting up into a number of bands began to wander and raid over the southwest, the Jicarilla, Mescalero and Lipan being in the east of their area and raiding into Texas and the plains country and the western groups centering about the mountainous country in southern Arizona. They obtained horses very early and became hard and daring riders. By the time of the pueblo revolt in 1680 they were well organized and powerful and had begun that career of raiding, stealing and murdering which lasted for 200 years and kept the whole southwest in terror. Only with the coming of the Americans about 1850 was it possible to begin to conquer them and 40 years of desperate effort were necessary to achieve this end. Since Geronimo's surrender in 1886 the Apache have lived quietly on their several reservations, devoting their time to farming, cattle raising, basket making and the task of adjusting themselves to modern life.

PHYSIQUE. The Apache are of medium height and have unusually broad shoulders and deep and well developed chests. They are not over-muscled but are very lithe and capable of great endurance. Their faces are broad and their skin rather dark.

DWELLINGS. The western Apache all used the brush wickiup or khuva. The eastern groups used the tipi of the Plains type, but lived in brush shelters when hunting. Today many live in log or stone cabins, though often these buildings are used for storage while the family live in a tipi or wickiup close by. For details of these dwellings see Leaflet 9.

FOOD. The Apache hunted the deer, elk, antelope, rabbit, field mice, turkey, quail and doves. They were very fond of the meat of horses and donkeys. They would not eat fish, pork, waterfowl or bear. Today mutton and beef have replaced the game. They practised a little agriculture, but depended for their vegetable food to a very large extent on natural products. Acorn meal, cactus fruits, wild potato, tule bulb, sunflower seeds, walnuts, wild strawberries, wild grass and pumpkin seeds, mesquite beans, the inner bark of the pine and pinole, or parched

corn were all used for food. Their most characteristic food was made from the leaves and stems of the mescal, roasted for two or three days in pits. At present they grow corn and garden vegetables and also buy many American foods at the trading posts. An intoxicating drink called Tiswin is made from fermented germinated wheat or corn. A wine is made from pitaya cactus fruit.

CLOTHING. Early Apache clothing was made of skins, the men wearing shirts and leggings and the women two-piece dresses. In warm weather the men used only a breechcloth and the women a short kilt. Later the men wore American shirts and long tight woolen drawers. At present American overalls, calico dresses, and hats are commonly used. The war moccasin was of a shape peculiar to the tribe. It was knee length, with several folds at the top. The sole extended past the toe and was turned up and cut into a small disk rising in front of the toe. A band about the hair was the common headgear, though buckskin caps with feathers on the crown were worn by the men at times. Most of the leather articles were beaded like those of the Plains Indians. Often they were brightly painted, or decorated by burning with a hot wire. Generous fringes were common. Pouches, quivers, shields, parfleches and saddle-bags were all made from skins. Bead necklaces were always worn.

BASKETRY. The Apache are amongst the best of the basket makers. There are four types. Twined burden baskets and water jars of sumac, cottonwood, willow, squawberry and mulberry. The burden baskets often have horizontal colored bands and fringes of buckskin. The water jars are coated with pitch, and often have handles. These are made by all the bands. Western Apache coiled bowls and storage jars show fine tight coils with a light background of willow or cottonwood and human, animal or geometric designs in black martynia and rarely red-brown yucca. Mescalero coiled work has broad, flat, flexible coils of yucca with simple light green, brown and yellow designs. The colors come from different parts of the yucca. Shallow bowls of varying size are the commonest forms, but water jars are also made. Jicarilla coiled bowls, deep, straight sided waste baskets, fish creels and round water jars have thick, broad, stiff coils of willow or sumac with simple geometric patterns in brilliant colors, originally native, but now mostly aniline. Sometimes the bowls have a series of loops running around the rim.

POTTERY. All the Apache formerly made pottery, but the art has gradually disappeared until only the Jicarilla carry it on, and perhaps even among them it has died. The pottery was black, unpainted ware with raised designs around the rims. Deep, narrow cook pots with bullet shaped bottoms were the common pieces.

MUSICAL INSTRUMENTS. The Apache made fiddles from a hollow section of agave or aloe stem. The ends were stopped with wooden disks and horsehair strings stretched the length of the tube over a crude bridge. The music of this unusual instrument was supplemented with that produced by flutes, drums, rattles and moraches or notched resonators. The songs of the Apache are but little known.

GAMES. The native games were limited to hoop and pole, dice, running, archery, cats cradle and a women's dice and stone game. The Apache are great card players, being especially fond of monte. When American cards could not be found, they made cards of horsehide.

WEAPONS AND WAR. Bows and arrows, lances, clubs and knives were the native weapons of the Apache, but they always had fine rifles in their last wars. In raiding, guerilla warfare they were supreme.

Their stealthy, sudden tactics enabled them to inflict enormous damage and to escape the large armies which were usually on their trail. With their endurance, skill as pathfinders and as horsemen small groups were able to terrorize very large areas.

POLITICAL ORGANIZATIONS. The Apache were broken up into many small bands, each under a chief appointed for ability. The chief was not supreme, but usually acted on advice of a council of elders. The chieftainship was sometimes hereditary. Several of the bands might unite temporarily against a common danger.

RELIGION. The Apache are very religious, always carrying with them charms and fetishes and the pollen of the tule-rush to use in connection with their endless private prayers and incantations. They have innumerable gods, with the sun and moon as the most important. Most animals, planets, and such natural forces as wind or thunder are thought of as gods. In addition there are various culture heroes which are worshipped. The gods are called Gans or Kans and are often characterised with a color adjective. Medicine men and women are very powerful, and witchcraft plays an important part in the life of the people. There are a good many ceremonies and dances, but they are neither as frequent or elaborate as among the pueblos. A girl's adolescence ceremony is the principal one observed today, though complicated healing dances are also held at irregular intervals. What is known of the mythology indicates that it is rich and varied and of the general southwestern type.

CUSTOMS. Children are kept on baby boards until they can walk, with a resultant head flattening. Marriage is simple, being largely dependent on the wishes of the young couple. It is attended with gift-giving. Among the eastern bands there are no clans and no trace of exogamy, but both clans and exogamy exist in the west. Polygamy was practised. The dead are buried in the rocks and canyons. The graves are avoided and the property of the dead is destroyed. Descent is through the mother. A strict mother-in-law taboo is observed. There is a dislike of telling one's name. Face tattooing is quite common.

Compiled from the following sources by Jean Allard Jeançon and F. H. Douglas:

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Jicarilla Texts—Goddard. Vol. 8

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The Early Navaho and Apache—Hodge. 1895, pp. 223-240

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Apache Gentile Systems—Bourke

Apache Mythology—Bourke

An Apache Campaign in the Sierra Madre—Bourke

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The Land of Poco Tiempo—Lummis

United States Census for 1890: Report on Taxed and Untaxed Indians
Don Diego—Reagan

DENVER ART MUSEUM

DENVER, COLORADO

Department of Indian Art

NORMAN FEDER

Curator



HOPI COILED AND WICKER BASKETRY

Leaflet No. 17

1931

HOPI INDIAN BASKETRY

LOCATION. The Hopi Indians are a tribe of sedentary, agricultural people of Shoshonean stock, numbering about 3,000 and living in ten villages or pueblos in north central Arizona. For further details see Leaflets 4, 8, 9, 13 and 17.

HISTORY. Hopi basketry of today has undoubtedly descended from that practised by the prehistoric pueblo people, as specimens of all weaves have been found in excavated ruins. But no specimens can be seen in museums which were collected earlier than the latter half of the last century. The art degenerated with the coming of aniline dyes in the eighties. But beginning with the split in the Hopi tribe, which ended in the founding of the village of Hotevila, there began a revival of the native dyes. The conservatives who left the main body of the tribe to go to Hotevila refused to buy the aniline dyes and began making the old native colors. This revival, beginning in the very early years of this century, has since been carried on very successfully under the influence of lovers of Indian crafts, and of traders who have refused to buy anything but high class work. At present about 300 Hopi women are basket makers, young and old alike turning out baskets fine in quality of weave, color and design. The vast majority of this output is made for sale. Thousands of dollars come to the Hopi from this source.

WICKER BASKETRY

ORIGIN. Wicker baskets are made only on the third or west mesa and especially at Oraibi. Wicker basketry is not common among the American Indians. Hopi work of this kind is called the finest and most artistic in the world.

MATERIALS. Wicker basketry has a number of warp-ribs radiating from a central hub, and a weft consisting of lighter material woven in and out of the ribs in concentric circles. The ribs are made of sumac or willow twigs and the weft from the stems of three varieties of rabbit-brush, *Bigelovia Graveolens*, *Chrysothamnus Graveolens* and *Verbesnia Encelioides*. The edge is wrapped with strips of yucca leaf.

TECHNIC. The maker arranges two lots of sumac or willow twigs, each lot containing from two to thirteen or possibly more groups of from one to four twigs, which are somewhat longer than the diameter of the basket to be made. The groups of twigs making up each lot are bound together at the center into a flat mass with rabbit-brush stems passing over and under each group of twigs or sometimes completely around the lot. When sections of from 1 to 5 inches have been thus bound the two flat masses of parallel twigs are laid together at right angles and are fastened to each other at the corners of the bound sections with rabbit-brush stems. The edges are not bound together, so that it is usually possible to pass a thin blade between the two groups. After the center is started in this manner the radiating groups of twigs are arranged like the spokes of a wheel and the space between them is filled up by weaving rabbit-brush stems over and under them in concentric circles. As the weaving in of the rabbit-brush progresses additional radiating twigs are inserted so that a basket will have many more spokes at the rim than in the center. When the desired circumference has been reached the projecting ends of the ribs are bent sideways and are tied together with strips of yucca leaf. The basket resembles a circular spiderweb, except that the lines connecting the ribs are very close together.

TOOLS. A knife or scissors to cut the stems to the required length is often used. No other tool is necessary.

SHAPES. Flat or slightly curved plaques from 4 to 36 inches across (A), used for food and sacred meal trays and in any case where a plate-like object is needed. The plaques are very generally slightly concave with a low hump in the center. Waste baskets (B) with straight or flaring sides, from 6 to 18 inches deep. These were probably once small storage baskets, but are now made exclusively for sale. Shallow bowls (C) of various sizes. This is apparently a rather new shape.

COLORS. Black—sunflower seed, navy bean, soot, coal, ink of resin and iron alum. Blue—indigo, navy bean, larkspur flowers, sunflower seed shells. Red-brown—roots or whole plant of se-e-ta, iron ochre, alder bark, sumac berries, cockscomb flowers, thelesperma. Yellow—rabbit-brush flowers, sunflowers, ochre. Orange-yellow—saffron flowers. Green—se-e-ta stems, navy bean, copper carbonate. Brown—se-e-ta blossoms, navy bean, iron ochre. White—kaolin or limestone. Pink, cerise, purple, carmine, and violet—cockscomb flowers. Many additional shades are made by combining and treating these materials in different ways.

DYEING. Colors are applied to wicker baskets both before and after weaving. In the latter case it appears that mineral colors are used. These are ground to powder, mixed with saliva and the juice of chewed melon seed and painted on with a tuft of rabbit fur. If the dyes are applied first the peeled and smoothed stems are boiled in the dye and are placed when still wet on a rack placed over a fire. A blanket is held over this rack and raw wool is burned. The smoke of this rises through the wet twigs and sets the dye.

DESIGNS. Hopi basket designs are all based on life forms and the inspiration of many can be seen, but in other cases conventionalization has been carried to such extremes that the design units can only be considered as geometrical figures. Birds, parts of birds, butterflies, kachinas, either whole or the heads only, clouds, rainbows, sun and stars, whirlwinds of many types, antelope, snakes and geometric conventionalizations of the foregoing are the common designs on wicker basketry. Endless combinations of these elements are produced. The designs are not drawn out before the work begins, but are visualized in the maker's mind and carried out from memory. The counting of stitches guides the worker.

COILED BASKETRY

ORIGIN. Coiled basketry is made in the three villages of the second or middle mesa. In type of coil, shape and design these baskets very closely resemble those made in North Africa.

MATERIALS. The coils are made of strips of yucca leaf wrapped around bunches of a coarse grass, *Hilaria Jamesii*.

TECHNIC. A slender coil is begun by wrapping a long strip of yucca leaf about a small bunch of shredded bits of the same material. This coil is rolled on itself and sewed in position with yucca leaf. In making a flat plaque the inside faces the worker, and the outside if the shape is a deep one. The sewing is done by making a hole near the top of the already wrapped coil with an awl of bone or steel, passing a strip of yucca through this hole, around the foundation material projecting from the coil so far finished, and back to the next hole. Each stitch is pulled tight when made and firmly binds the new coil to the upper strands of the finished one. The maker starts increasing the size of the coil almost

at once and at the third or fourth turn she begins introducing the *Hilaria* grass. The diminishing of the coil occurs again on its last turn. In the older baskets some of the grass was left sticking out at the end of the final coil. The coils are nearly round, remarkably uniform and average about three-quarters of an inch in thickness, though both larger and smaller coils are often made.

SHAPES AND USES. Perfectly flat plaques (D) from 4 to 16 inches across, are used for food trays. Deep waste baskets (E) of many shapes and sizes are made for sale. Small globular baskets (F) with covers were probably made for seed storage. Coiled basket jars of very large size, five feet or more high, have been made on the special order of Americans. In 1872 wide brimmed hats were made with very fine coiling, but proved too heavy for use.

COLORS in coiled baskets are much less brilliant and varied than in the wicker. Black, yellow, red-brown, orange and several shades of green are usually seen. All but the greens are made from the dyes described under wicker basketry. The greens come from different parts of the yucca plant and are not dyed.

DYEING is done by boiling the yucca strips in the color, which is set with smoke, as described above.

DESIGNS are made up from the elements mentioned above. The designs are in general less complicated than on wicker. Kachina figures seem to be more common than on wicker and bird forms less so. For a discussion of design see Vol. 54, Proceedings of the U. S. National Museum, pp. 268-270.

TWILLED BASKETRY. This type of basketry is not made much in Hopi towns. Rather crudely shaped bowls in checkerboard or diamond twilled work are used for work baskets. The ends of the fibres are bent over and sewed around a hoop of wood, which forms the rim of the basket. Square shapes, bottles, head rings and pottery rests, forehead bands, belt weaver harness and cradle head bows are all made to some extent in this style of basket making. The material is always yucca. This type of work was common to all the Hopi villages. It is also much made in the eastern pueblos.

MATTING. Mats were formerly made by the Hopi in considerable quantities, but at present only two types are made. The first is made from straight rods held together by twined weaving with a few strands of yarn. This is used to wrap the bride's costume. The second type is made from yucca in checked or twilled weaving and serves for a hood over the fireplace. It is plastered with clay.

FINE COILED BASKETRY. Much of this work was found among the Hopi by the early American explorers and was supposed by them to be Hopi work. But it is now known that these pieces are Apache, Pima and Paiute baskets which had come into the possession of the Hopi.

Compiled from the following sources by Jean Allard Jeancon and F. H. Douglas:

UNITED STATES NATIONAL MUSEUM

Proceedings, Vol. 54, pp. 235-297. The Hopi Indian Collections in the United States National Museum—Hough.

Annual Report 1902. Aboriginal American Basketry—Mason.

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MUSEUM OF NORTHERN ARIZONA

Museum Notes, Vol. 3, No. 1. The Hopi Craftsman.

Manuscript on Hopi Basket Dyes.

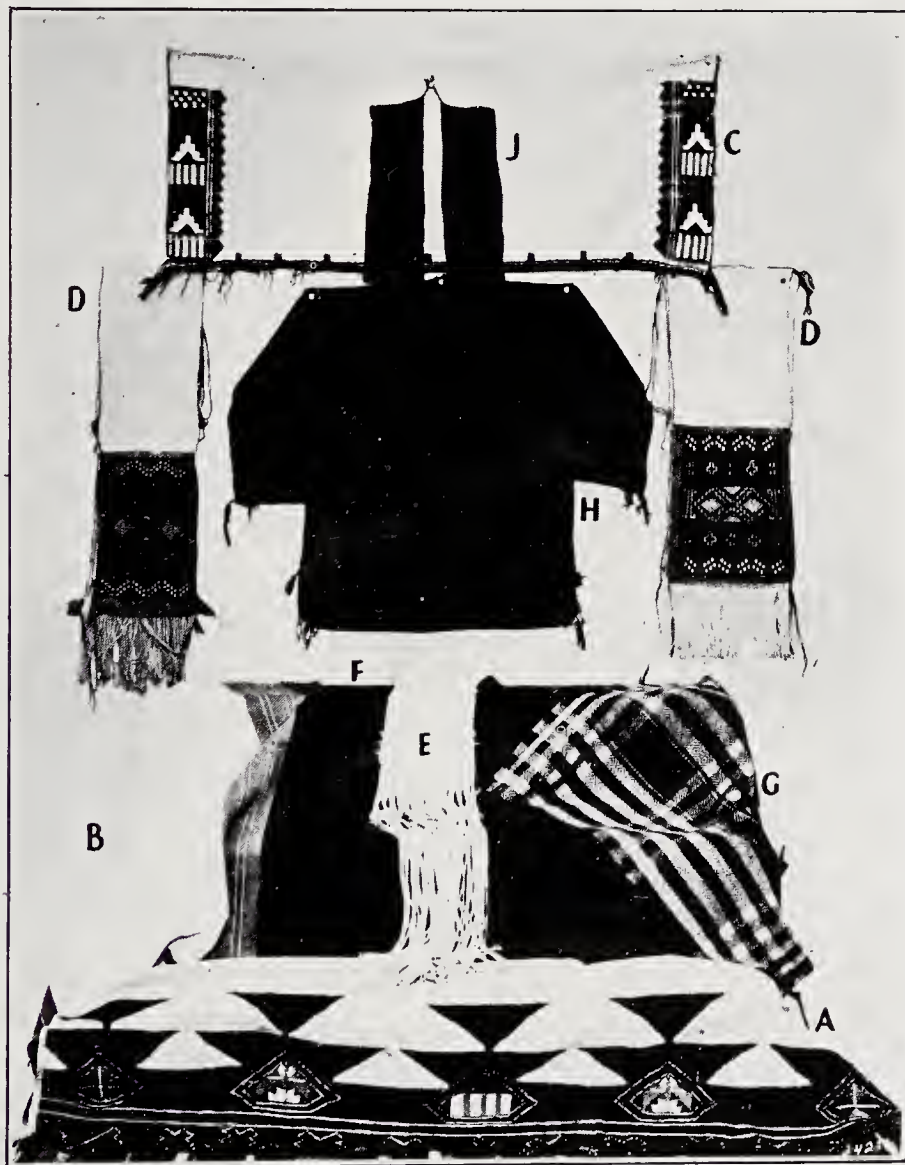
Manuscript from Lorenzo Hubbell, Oraibi, Arizona.

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HOPI WOVEN FABRICS

Leaflet No. 18

1931

Reprinted May, 1971

HOPI INDIAN WEAVING

LOCATION. The Hopi Indians—formerly called Moqui—are a sedentary, agricultural people of Shoshonean stock living in ten pueblos or villages in north central Arizona. The population is not far from 3,000. For further information see Leaflets 4, 8, 9, 13 and 18.

HISTORY. Presumably the Hopi have carried on the weaving of their prehistoric ancestors, who wove fabrics from cotton, yucca fibre, fur strips and feathers. The earliest mention of Hopi weaving is by Espejo in 1581. He describes white cotton dresses evidently like those made today. The weaving of wool was begun sometime after the introduction of sheep by the Spaniards, who first entered the southwest in 1539-40. The two types of weaving have been carried on ever since and are made today in considerable quantities.

WEAVERS of today are men, with a few rare exceptions, but 19th century travelers speak of the women as being the weavers. At present there are about 200 weavers, of whom perhaps 75 make heavy wool blankets. All men above middle age can weave. The center of the industry is Hotevila, with Shimopovi in second place.

LOOM. Weaving is done on a horizontal loom similar in most respects to that of the Navaho described in Leaflet 3. The upper beam is fastened to the beam ends or to pegs set in the walls of the kivas or in the exterior or interior walls of the houses. The lower beam is tied to the floor with ropes run through sockets or around pegs driven in the floor. The warp is strung in a series of long figure 8s between two rods laid on the floor and held in place by pegs. After the warp is strung one of the rods is tied to the lower beam and the other is tied at the ends to a pole suspended from the upper beam by a rope strung in a spiral. By pulling this rope the warp is kept tight.

WEAVING. Hopi weaving is more complicated than that of the Navaho. Plain, checked and diaper weaves are used, the latter being a style showing a repeated figure, usually a diamond, in the cloth. These different styles are produced by the complicated use of several heddles or heald rods. For a description of these rods see Leaflet 3. Some types of blanket have diaper weaves on the edges and plain weaving in the center. When making these one edge is woven first. Then the warp and its poles are taken from the loom, turned upside down and tied back in the loom for the weaving of the other edge. When the edges are done the center is woven in. The yarn is passed through the warp and beaten into place with wooden batten sticks, combs and needles as in Navaho weaving.

BELT WEAVING. Belts, sashes, garters, headbands and other narrow fabrics are woven in considerable quantities. The loom is like that used for large fabrics except for two points. The warp is attached at the top to a wooden roller instead of a rod and its other end is held in place by a band passing around the back of the weaver. Belt warps, heddle manipulation and designs are exceedingly complicated. For details see Proceedings of the United States National Museum, volume 54, pages 255-257.

COTTON

CULTIVATION. The cotton used by the Hopi, *Gossypium* Hopi Lewton, formerly grew wild quite generally in the southwest. But the coming of large herds of domestic animals reduced its growth to a great

extent. In recent years it has been cultivated in the region of Moenkopie, the westernmost of the Hopi towns, and to a lesser extent around Oraibi. After the coming of many American trading posts the Hopi began to neglect its cultivation and to spin their yarn from cotton batting bought at the traders. Still more recently they have done their weaving with a cotton string. In 1930 long staple cotton was introduced with the hope that its cultivation would be taken up by the Hopi.

PREPARATION. The cotton bolls were freed from seeds by whipping them with a bundle of pliant rods on a bed of sand, leaving the cotton in a fluffy mass which was worked into loose rolls by hand.

SPINNING. The loose rolls are spun into yarn on a spindle consisting of a slender rod 12 to 20 inches long, over which is slipped a heavy perforated disk of wood, horn or earthenware. For more details about spinning see Leaflet 3.

ARTICLES MADE. Blankets (A), about 50 by 60 inches, either plain or ornamented with embroidery, shawls (B), somewhat smaller, men's dance kilts (C) and sashes (D) decorated with embroidery, and ceremonial and wedding sashes (E) with large tassels are the most common articles of cotton. The blankets first mentioned are bride's dresses and are unornamented for the first year. The shawls, of several sizes, are worn by the women on festive occasions, and the kilts and sashes are worn as dance costumes.

WOOL

SOURCE AND PREPARATION. The Hopi obtained sheep from the Spaniards at an early date and are today the owners of large flocks of sheep and goats. The large amount of dark woolen articles woven by the Hopi indicates a high percentage of black sheep in their flocks. The fleece is clipped, washed and spun as by the Navaho. The Hopi take more care in their spinning than do the Navaho. The uniform thickness and evenness of the yarn are insured by rubbing it with a corn cob and by singeing off excess fibre. The yarn is very strong and lasting.

ARTICLES MADE. The best known wool product of the Hopi loom is the dark brown or blue woman's dress (F), usually about 50 by 60 inches and having a black or dark brown center section and broad bands of diamond pattern blue weaving on the long edges. This dress was formerly woven by all the Hopi but is now found only at Hotevila, or in the other villages on ceremonial occasions. The blanket made by the Hopi most like those of the Navaho is usually of a size convenient to wrap around a man. (See cut on Leaflet 17.) Its main color is likely to be dark, with narrow transverse stripes in a few simple light colors. The name "Moqui pattern" is usually applied to this striped design. At times simple decorative figures are found in these stripes. A medium grey ground is often used. At Hotevila today a number of blankets are woven with black and white stripes and checks. Children's blankets (G) show small black and white checks also. A few blankets are seen with colors and designs like those of the Navaho, and some are decorated with Kachina figures. Formerly many men's shirts were woven of heavy blue wool (H), though occasionally black and white checked. These shirts were shaped like a middy blouse and the seams under the sleeves and down the sides were often left open. Narrow belts and garters are made, usually in red, green, black and white.

COLORS AND DYES. The Hopi colors are few, red, green, blue, yellow, black, brown and white being those commonly used. In former times they were produced with native colors, but any colors now being made or which can be seen in museums are the result of aniline dyeing. Blue is the one exception, as it has been made with indigo since Spanish days. But little of it is used today.

EMBROIDERY. The white cotton dresses, kilts and sashes are decorated with wool embroidery. The yarn is now all American made, in the colors mentioned above. Steel darning needles have replaced the bone awls formerly used. The article to be embroidered is stretched on a wooden frame. The art of embroidery as now practised is a fairly recent one and is probably an outgrowth of the painting on kilts mentioned by Espejo or of the raised patterns found in the weaving. The designs are almost without exception conventionalized clouds, rain, fields and butterflies. The broad colored bands on the shawls and sashes are sometimes embroidered and sometimes woven. The principal designs are placed on the ends of sashes, the short sides of kilts and on the bottom long sides of the dresses.

KNITTING was learned from the whites at an undetermined date. It is done on wooden needles or on those of bone or celluloid purchased at the traders. Footless and kneeless stocking of thick blue (J) or white are the main product of this industry, though in recent years small thick mats have been made.

TRADE. While weaving was once practised to some extent in the other pueblos the Hopi have long been the principal source of the wool dresses and the cotton kilts and sashes used in the ceremonies of the eastern pueblos.

Compiled from the following sources by Jean Allard Jeancon and F. H. Douglas:

UNITED STATES NATIONAL MUSEUM

Proceedings, Vol. 54, pp. 235-297. The Hopi Indian Collection in the U. S. National Museum—Hough.

SMITHSONIAN INSTITUTION

Miscellaneous Collections, Vol. 60, No. 6. The Cotton of the Hopi Indians—Lewton.

MUSEUM OF NORTHERN ARIZONA

Museum Notes, Vol. 3, No. 1. The Hopi Craftsman.

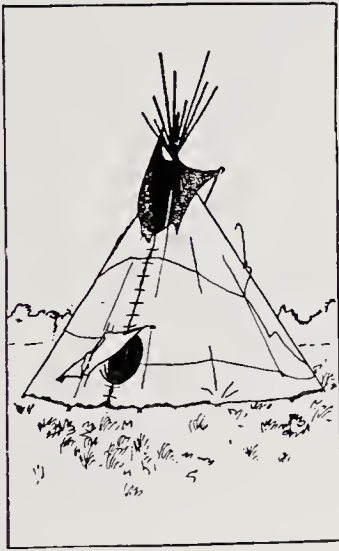
Bourke—The Moqui Snake Dance.

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EXTERIOR FIG. 1



INTERIOR FIG. 2

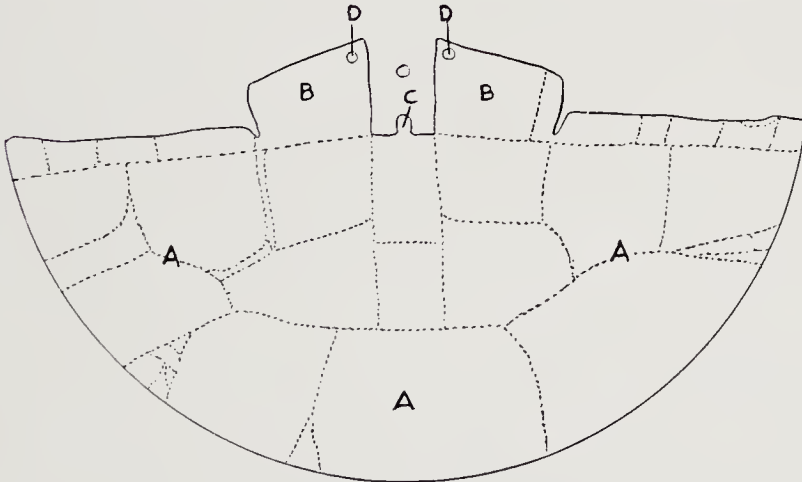


FIG. 3

- No. 1 and 2. THE PLAINS TIPI—Courtesy of the Cleveland Museum of Natural History
No. 3. A HIDE TIPI COVER—Courtesy of the American Museum of Natural History

Leaflet No. 19
April, 1931

THE PLAINS INDIAN TIPI

Reprinted July 1967

THE PLAINS INDIANS may be defined as those tribes which ranged between the Rockies and the Missouri River from northern Texas to southern Saskatchewan and Manitoba. While conical tents were used throughout all of Canada but the western side, they were not of the type used by the Plains tribes.

TIPÍ (Tee-pee) is a Sioux word which is applied to the tents of all the Plains tribes. *Ti* means "dwelling" and *pi* means "used for." Thus the word tipi means "it is used for a dwelling." Of course each tribe had its own word for the tipi. In the central and northern portions of the area the tipi was the only dwelling used. On the east it was sometimes used by the Earth Lodge tribes and on the west by the Brush Shelter peoples. It is impossible to say how long the tipi has been used, because it was developed before the coming of the white men. But from tribal legends it is indicated that it is not an extremely ancient form of dwelling. The tipi is in use today but it is disappearing.

POLES are made of lodge-pole pine, cedar, spruce and other straight, slim trees. Flexible poles are avoided. The trees are cut down, peeled and dressed down, usually to the heart wood. Most of this was woman's work, though men helped sometimes. The poles are from 10 to 40 feet long, with about 25 feet as an average, and taper from a diameter of from 2 to 6 inches near the butt, which is sharpened. Crow poles are the longest. Poles are kept as long as possible and become dark and polished from smoke and handling. They are worth about \$2.00 each and are not sold willingly.

COVERS were made of tanned cow buffalo hides until the destruction of the herds in the eighties. Since then canvas has been used, though some covers have been made of domestic cow hides. The buffalo covers were made in the spring of every year. The man killed the necessary animals and his women tanned the hides—removing the hair—and prepared a quantity of sinew thread and bone awls. A number of other women were then called in to sew the hides together, under the direction of some woman skilled in the process. Care was taken to avoid waste in the sewing. This work was usually done in one day. The cover is a rough half circle (A) with two ears projecting from the straight side (B). Between them is a small tongue (C). In the inner corners of the ears are holes or pockets (D).

SIZE OF COVERS. There is great variation in size. The average cover was made of 10 to 12 skins, had a radius of about 18 to 20 feet, and weighed about 125 pounds. Canvas covers are much lighter. As many as 50 skins were used, but this was very rare. The size of the cover somewhat depended on the wealth of the family in horses, as several animals were needed to transport a large tipi. The very large covers were sometimes made in two pieces.

PINS AND STAKES are made from slender, strong pieces of wood. The pins are used to fasten the edges of the cover together after it is placed on the poles. They are a foot or two long and are a half inch or less in diameter. The stakes are used to fasten the lower edge of the cover to the ground after it is placed on the poles. A branch with a strong fork on one end is often used. Sometimes iron stakes are found. In winter stones and earth piled against the base of the tipi help the stakes to hold tightly, and keep out moisture and drafts. Some tribes erected their tipis in shallow excavations.

THREE POLE FOUNDATION. This is used by the Cheyenne, Arapahoe, Teton Sioux, Assiniboine, Kiowa, Gros Ventre, Plains Cree, Mandan, Arikara, Pawnee, Ponca, Oto and Wichita.

FOUR POLE FOUNDATION. This is used by the Crow, Blackfoot, Sarsi, Shoshoni, Omaha, Comanche, Hidatsa, Kutenai, Flathead and Nez Perce.

ERECTION OF POLES. The process of setting up the tipi is the same for both styles. The cover is spread flat on the ground and the foundation poles are laid on it so as to measure the proper height to tie them together. When this position is determined the poles are marked to avoid this measuring in the future. The poles are next tied together at their crossing with a rope or rawhide band. A long end of the rope is left to serve as an interior guy. There are several varieties of knots, varying by tribe and by the type of set-up. The tied poles are placed on end. In the 3-pole type one pole faces east and forms the south door post. The other two are placed behind the door pole and are nearer to each other than to the door. In the 4-pole set-up the poles form the corners of a rectangle facing east with the short sides east and west. In both types the poles are erected so as to pull the tie very tight. When the foundation is firmly fixed the other poles are put in place. In the 3-pole type the first pole makes the other door post and the next four to six are set up to the north of it. The next group are placed south of the foundation door pole. The remaining go between the two back foundation poles. All but the last group rest in the front or east crotch.

In the 4-pole set-up the poles are set first on the long sides of the rectangle, the easternmost resting in the east crotch and the rest in the north and south crotches. At the east end two poles are placed for the door posts, while at the west end only one pole is first placed, the other being the cover-raising pole. In both types half to two-thirds of the poles rest in the east crotch. There is generally one pole every 30 inches, or about 20 to 25 poles to the average tipi. From 10 to 40 poles are found.

PLACING OF COVER. When all the poles but one are in place this is tied to the small tongue (C) between the ears of the cover and the pole is raised, lifting the cover with it. A guy rope is used to raise the heavy load. The pole is placed in the west crotch. The two sides of the cover are pulled around the poles until they meet in front. The left or south side is laid over the other and the two are pinned together with wooden pegs, which are put in from right to left. They are about six inches apart and extend from the bottom of the smoke hole, which comes part way down the east front of the tipi, to the top of the door. Sometimes the door sill is high, so that the pins are also used below it. After the pins are in place the women enter the tent and push the poles out against the cover, until there is no sagging. When all is tight the bottom edge of the cover is staked to the ground.⁹ Two women will put up a tipi in about half an hour.

SMOKE HOLE EARS. The cover is sewed in such a way that when it is in place the two ears (B) drop from the peak down the front of the tipi on either side of the smoke hole. When the tipi is set up the holes or pockets in the corners of the ears are caught on two slim poles running up the outside of the tipi from the ground. They hold the ears upright on either side of the smoke hole. Usually the lower ends of the ears are held taut by cords running to a tall pole set up several yards in front of the door. These ears serve to control the draft rising from the tent by keeping the wind from blowing down the smoke hole. By moving

the poles supporting them the ears can be set in accordance with the direction of the wind. In extremely bad weather they can completely close the smoke hole.

APPEARANCE OF TIPI. The completed tipi is an imperfect cone, with the back or west side much steeper than the front. In the Plains area the wind is almost always from the west. For this reason the door and smoke hole always face the east and a large percentage of the poles slope from east to west, bracing against the pressure of the wind on the steep west side. The floor area is not a perfect circle, inclining toward an oval shape in the 3-pole type and much more so in the 4-pole. The 3-pole is firmer, its cover fits better around the back and its smoke hole goes farther down the front. The 4-pole type needs outside guy ropes to keep it erect in a storm. It has two apexes, the lower where the foundation poles cross, and the upper at the intersection of the other poles. As the cover cannot rise above the lower apex it has a larger top hole and a shorter opening down the front than the 3-pole. The 4-pole type is considered more imposing and beautiful than the 3-pole type. When the tipi is new it is nearly white. Smoke and weather gradually darken it, especially toward the top. By spring the skin tipis had become quite translucent, looking like large lanterns when the fire was burning brightly.

SIZE OF TIPI. The average tipi is about 15 to 18 feet high and about 15 feet in diameter at the base. The range in diameter is 8 to 40 feet.

DOOR. There is much variation in the type of door, some tribes using a skin stretched on a wooden frame and suspended over a rather small oval opening, and others favoring a larger opening simply closed with a soft skin or blanket.

INTERIOR. A lining of cloth or skin (E) about 6 feet high is hung around the inside of the tipi. It is fastened to the poles and stretches to the floor. It keeps drafts and damp from those sitting in the tipi. It is usually decorated with paint or beads. On the south side are two beds (F) of skins or blankets, either resting on the ground or on mats of parallel rods tied together at the ends and held above the ground on a frame like a bedstead. These are for the owner and his family. On the north side is a guest bed. At the far end of each bed rises a back rest of slender rods, (G) like that used under the beds. The owner's weapons and medicine bundles are piled at the back opposite the door. Saddles and riding gear lie on one side of the door and household utensils on the other. In the center, somewhat toward the back, is the fireplace, a square of stones set a little into the ground. Some tribes have a small altar behind the fire. Miscellaneous equipment is hung from the poles or tucked away wherever there is room. In the summer the tipi is kept cool by rolling the cover up from the bottom.

DECORATION. On the outer surface large painted decorations were very often placed. These decorations are the property of the tipi owner and are part of his protective medicine. The designs are partly geometric and partly naturalistic, and usually display figures disclosed to the owner in one of those dreams which are so important in the life of the Indian. Bead and quill trimmings were also used. Cloth or hair streamers often hung from the tips of the poles.

CEREMONIES. Some tribes have ceremonial practises connected with the construction of the tipis, while others put them up unaccompanied with this feature. For certain ceremonies special large tipis are erected. Social and political rules regulated the position of the tipis in the village.

Compiled from the following sources by Jean Allard Jeançon and F. H. Douglas:

BUREAU OF AMERICAN ETHNOLOGY

1. Villages of Tribes West of the Mississippi—Bushnell
Bulletin 77. 1921

AMERICAN ANTHROPOLOGIST, NEW SERIES

2. Blackfoot Lodges—Grinnell. Vol. 3, p. 650
3. The Cheyenne Tipi—Campbell. Vol. 17, p. 685
4. Crow Tipis—Campbell. Vol. 29, p. 87

AMERICAN MUSEUM OF NATURAL HISTORY, NEW YORK

Anthropological papers.

5. Blackfoot Material Culture—Wissler. Vol. 5, Pt. 1.
6. Crow Material Culture—Lowie. Vol. 21, Pt. 3.

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7. Indian Homes—Madison. Cleveland, 1925
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For pictures 1, 3, 4, 5, 7. Information on many tribal types, 1, 3, 4, 5. Instructions for making a tipi, 7, 9.

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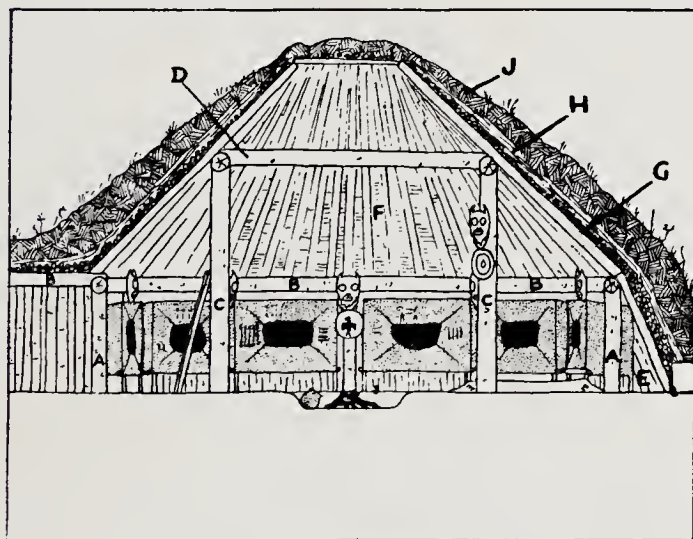
Department of Indian Art

NORMAN FEDER

Curator



EXTERIOR



INTERIOR

THE PLAINS EARTH LODGE

Courtesy of the Cleveland Museum of Natural History

Leaflet No. 20 — April, 1931

THE PLAINS INDIAN EARTH LODGE

HISTORIC PERIOD

DISTRIBUTION. The Plains earth lodge was used by the Mandan, Hidatsa, Arikara, Amahami and Cheyenne, living along the course of the Missouri River in North Dakota; by the Ponca, Omaha, Pawnee, Kansa and Oto living in Nebraska along the Missouri and Platte Rivers; by the Osage in southwestern Missouri; and by the Kiowa in northwestern Texas and Oklahoma.

HISTORY. This form of dwelling is considered by investigators to be very ancient. The Plains earth lodge is the fullest development of type of house that in one form or another is found throughout much of western North America and northeastern Asia. The most celebrated lodges were those of the tribes to the north of the area and those of the Pawnee. The Cheyenne abandoned the earth lodge in favor of the tipi in the 18th century, while the other tribes continued to live in them to some extent up till about 50 years ago. One or two lodges still existed in 1918 on the Mandan reservation. With care, a lodge would last a generation.

EXCAVATION. When a satisfactory site had been picked, usually near a stream, a circle from 20 to 60 or even 100 feet in diameter was described on the ground with a stick tied to a long rope, the other end of which was attached to a pole driven into the ground in the center of the building to be constructed. Inside this circle an excavation was made from 1 to 4 feet deep, the earth being thrown up around the edge of the hole. At one point a ramp 4 to 6 feet wide was dug, leading from the bottom of the pit, at its edge, to the ground level.

FRAMEWORK CONSTRUCTION

OUTER BEAMS. Around a circle $1\frac{1}{2}$ feet smaller than the limits of the excavation was set a row of strong forked or notched peeled posts (A), which were from 4 to 8 feet high and from 8 to 10 feet apart. These posts were linked together with beams (B) resting on their forked tops. Posts connected at the top with beams were also set along the sides of the ramp leading out of the pit, thus making the entrance hall. This was about 5 feet wide, 6 feet high, 12 to 15 feet long.

INNER BEAMS. Four large posts (C), from 10 to 15 feet high, formed the corners of a square set around the center of the building. These posts were placed about half way from the rim to the center of the excavation. Four stout horizontal beams (D) connected the tops of these posts.

CONSTRUCTION OF WALLS AND CEILING

Two sets of small, tapering peeled poles, sometimes split in half, were laid close together on the two sets of foundation beams. One set (E) ran at an angle of about 45 degrees from the floor of the pit, at the bottom of the wall, to the lower or outer set of beams. The second set (F) ran at an angle of about 30 degrees from the tops of the lower beams up towards a point directly above the center of the pit, resting at about their midpoint on the high inner set of beams. The slender, upper ends of these poles were cut so as to form a circular opening 3 or 4 feet across. The poles were tied to the beams with bark fibre ropes. Though the circle formed by the butts of the poles was much larger than that at their tips, the taper of the poles was sufficient to allow them to lie close together at all points, thus presenting an evenly corrugated surface on the walls and ceiling of the lodge. Poles were also placed on the walls and roof of the entrance passage.

CONSTRUCTION OF ROOF

INNER LAYER. On the ceiling poles of the lodge and entrance passage, at right angles to them, were placed several layers of willow rods (G), laid as close together as possible. These rods were tightly bound to the poles.

MIDDLE LAYER. On top of the willows was constructed a thatch of bundles of coarse grass (H), arranged in overlapping layers so as to shed water.

OUTER LAYER. The final coating of the roof was made of thick strips of sod, laid to overlap like shingles (J). This layer was rendered impervious to water by tamping it into a solid mass. Grass and flowers rooted in the earth roof of the house, which soon appeared to be a natural mound. The only sign of the life inside was the smoke drifting from the center smoke hole. The roof was a favorite lounging place.

There were several variations of this form of roof. Sometimes the grass thatch was omitted and clay often replaced the outer layer of sod.

DIVISION OF LABOR. The men cut, hauled and set the heavy posts and beams, while the women bound the timbers together and did the thatching and sodding.

DRYING PLATFORMS were built by every lodge, either directly in front of the door or in the spaces between the lodges. The platforms varied considerably in size and details of construction. The average platform was made by setting 2 to 4 pairs of poles in parallel rows. Half way up these poles cross pieces were fixed, on which was laid a tight floor of poles. The floor area was about 12 by 20 feet. Cross pieces were also fastened across the tops of the poles. Food and hides were dried on the platforms.

INTERIOR

LIGHTING. The only light entering the lodge came through the smoke hole. As the upper part of the room was usually rather full of smoke the lodges were dimly lighted, unless a bright fire was burning.

DOOR. The long entrance passage was closed at both ends, the outer door being made of hide stiffened with a wooden frame and the inner one a curtain of soft tanned hide.

FLOOR. All loose earth left from the digging was carefully removed. This cleanup was followed by a thorough tamping of the floor. It was next flooded with water, after which dried grass was spread every where and burned. This wetting and heating process was repeated several times, until the earth was nearly as smooth and hard as stone. Much care was taken to keep the floor clean by sweeping it with brooms of grass or twigs. Grinding mortars and storage caches were dug in the floor.

FIREPLACE. In the center of the room, directly under the smoke hole, was the fireplace, a rather shallow square or circular excavation of hard baked earth lined on the sides with stone. Pots were suspended over the fire from tripods, posts set slanting in the earth or poles held over the fire by two upright posts.

BEDS. In most earth lodges partitions of rods, skins or rush mats were built out from the wall, dividing the outer circumference of the room into a number of open faced sections. In these, low platforms were built,

on which beds of skins or blankets were made up. Sometimes the beds were enclosed in large hide boxes, often movable, equipped with curtains to keep out the cold. In the southern part of the earth-lodge area the partitions and platforms were often dispensed with.

OTHER FURNITURE. The space outlined by the four central posts was the social center of the lodge. In winter it was often cut off from the rest of the room with buffalo hide curtains. Back rests of willow rods, skin covered basketwork benches, piles of skins, rush matting and cushions of various kinds provided seats around the fire. The place of honor was opposite the door. Much of the war, hunting and riding gear of the members of the household was hung on the foundation posts nearest the beds of the owners, or on special posts set in front of the beds.

Sometimes a partition of coarsely woven or wattled reeds or twigs was built several feet in front of the door and running from one side of the room nearly to the other. It was usually covered with skins. This served as a wind break.

OCCUPANTS. The number of persons living in each lodge depended on its size. Small lodges were the homes of one man and his various relations, while the larger buildings might contain several groups, with a total number of from 40 to 60 persons. There was ample room for this number, for a chamber 50 to 60 feet in diameter is extremely large.

HORSES were often kept in the lodges in bitter weather. This favor was reserved for only the very best animals belonging to the lodge owner. The horses were stabled behind a low fence built to one side of the room.

CEREMONIES accompanied every step in the building of a lodge, from the marking of the circle to the putting on of the sod. The Pawnee ceremonies were extremely elaborate. Facts about them are given in Bureau of Ethnology Bulletin 30, volume 1, page 411.

VILLAGE PLAN. The villages contained from a few dozen to over one hundred lodges. In some towns the lodges were fairly regularly laid out in circles around a central plaza, while in others they were clustered together without plan. A good many of the lodges faced east, but there was no set rule about this.

FORTIFICATIONS, consisting of palisades of logs enclosing walls of rough basketwork plastered with clay, were built around some of the villages.

Compiled from the following sources by F. H. Douglas:

BUREAU OF AMERICAN ETHNOLOGY

1. Indian Villages West of the Mississippi—Bushnell Bulletin 77, 1922

UNITED STATES GEOLOGICAL SURVEY

2. Ethnography of the Hidatsa—Matthews Miscellaneous Publication No. 7, 1877
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4. Indian Homes—Madison. Cleveland 1925

PEABODY MUSEUM, HARVARD UNIVERSITY, CAMBRIDGE, MASS.

5. The Mandans—Will and Spinden. Papers, Vol. 3, No. 4, pp. 103-110

AMERICAN ANTHROPOLOGIST, NEW SERIES

6. The Origin of the Earth Lodge—Linton. Vol. 26, p. 247

1. Has many pictures and information on the lodges of all tribes which built them.

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NORMAN FEDER - Curator



NAVAHO INDIAN LIFE

From a model in the Field Museum of Natural History

Leaflet No. 21

April, 1931

THE NAVAHO INDIANS

Reprinted July 1967

LOCATION. The Navaho Indians are a pastoral people of Athabaskan stock, at present living on a very large reservation located principally in northeast Arizona, but running over quite extensively into New Mexico and less so into Utah. The Navaho call themselves Dineh. The Spaniards called them Apaches de Navahu, the latter word being the name of a Tewa pueblo near which some of the Dineh lived. The tribe is outstanding among American Indians for its increase in population, having grown from about ten thousand to forty-five thousand in the last sixty years.

HISTORY. It seems certain that the Navaho and their close kin, the Apache, came to their present homes from the northwest, but the exact date cannot be closely determined. Some authorities place their arrival within the last five hundred years, but others feel that it occurred much earlier. According to their origin legend they split with the Apache about four hundred years ago. Sometime after the split, being a small tribe, they fled to the depths of the Canyon de Chelly, in Arizona, and from there conducted a series of raids and wholesale adoptions of conquered peoples that rapidly increased their number. Clans from Acoma and Zuni voluntarily joined them. After 1848 these raids brought them in conflict with the newly arrived Americans and a constant struggle was kept up until the defeat of the Indians by Kit Carson in 1863. All the tribe was taken to Fort Sumner, New Mexico, also called the Bosque Redondo. Here they suffered greatly from sickness and hunger. In 1867 they were allowed to return to their old homes.

PHYSIQUE. There is no distinctive Navaho physical type because of the extensive mixing by marriage and adoption with the tribes surrounding them. All types of stature and head shape are found.

DWELLINGS. The Navaho live in dome shaped huts of logs and earth, called hogans. In the summer they build crude shelters of poles and leafy boughs. For details of construction see Leaflet No. 9.

CLOTHING. The earliest costumes of the Navaho were wraps and leggings of woven yucca and grass fibre, sometimes mixed with rabbit fur. Later they made shirts, trousers, etc., of buckskin, much of which was obtained from the Utes. After weaving was introduced shirts, dresses, blankets and shawls were woven. Probably cotton articles were obtained from the Pueblo weavers. The men wore loose cotton trousers split up to the knee and fastened closely about the calf with silver buttons, like a legging. At present both sexes are much inclined to wear velveteen shirts in solid colors. The women wear long, full calico skirts and the men American trousers or overalls. The old cotton trousers are still seen. Old men and children often wear only a breech-cloth when herding. Ankle high, hard soled moccasins of brown leather are worn by both sexes. They fasten across the instep with a silver button. The hair is worn long and is tied in an hour-glass club low on the neck. Long narrow belts, garters and hair ties woven by themselves or the Hopi are much used. Formerly the men wore quite elaborate caps of leather, but their use has long since ended. As a substitute they now like to wear heavy fur caps. Nowadays the men wear cloth head bands or broad brimmed felt hats. Much silver, shell and turquoise jewelry is worn by both sexes.

FOOD. Corn, beans, squash and melons have long been staple foods. But the wandering life of the old days often kept the Navahos from raising field crops and forced them to depend on many grass seeds and the fruit and roots of various bushes and plants. The meat of almost all

wild animals and birds was eaten fresh or preserved by drying. Now the old foods have nearly all gone. Mutton is the chief meat dish. Beef and horse meat are sometimes used. Corn, peaches and other garden crops are still grown in quantity. Great dependence is placed on the American made foods procurable at the many trading posts on the reservation. Candies, sweets and soda pop are very popular. They used to make an intoxicating drink like Apache tiswin, but now whiskey is preferred. But drunkenness is uncommon except in a few of the railroad towns.

STOCK RAISING. Sheep, goats and horses were obtained at a very early date from the Spaniards. The flocks have increased greatly and their care is now the chief occupation of the tribe. The original herds have often been increased by grants from Congress. Some cattle are raised. The horses are small and of poor quality, though the Government has improved the stock considerably in recent years.

WEAVING. That the Navaho learned weaving from the Hopi and Zuni about 150 years ago is indicated by the available evidence, though from their legends it might be supposed that they wove much earlier. The art reached its greatest height in the middle years of the 19th century, when blankets of unequaled perfection in design, color and execution were woven from hand spun ravelings of several kinds of machine made wool cloth, of which bayeta, or Spanish and English baize, is the most famous. Fine blankets of native wool were also made. The introduction of aniline dyes and machine spun yarn began a decline in quality which persisted until the beginning of a revival about 1910. At present the industry is in good condition, with an increasing leaning toward the old designs and colors. For details of carding, spinning, construction of the loom, etc., see Leaflet No. 3.

BASKETRY. Formerly baskets were made in considerable quantities, shallow bowls, water bottles and several deep shapes being the common varieties. The baskets were coiled, with sumac splints and a two rod and grass bunch foundation. These baskets are quite flexible. Nowadays no baskets are made, but those that are needed for ceremonial use, the shallow bowls, are obtained from the Paiute and Apache, who copy the Navaho shapes and designs, but use the stiff three rod coil. The ceremonial bowls, commonly called marriage baskets, usually show a red and black zigzag band, broken at one point. This break is to help the medicine men to place the basket in its proper ceremonial position. These baskets are often inverted and used as drums. Straight bands and crosses with boxes on the arms are other common patterns.

POTTERY was formerly of two types, decorated jars, bowls and canteens and undecorated cooking pots with bullet shaped bottoms. The latter were often headed with buckskin and used for drums. The decorated ware, which showed brown or black designs on a cream or light tan ground, has not been made for a long time, and it is doubtful if many cook pots are now made.

SILVERWORK. The Navaho learned silversmithing from the Mexicans about 1850. The art is now very extensively carried on. Mexican and American coins and some sterling silver are hammered and cast into many different kinds of jewelry, into which turquoise and other stones are often set. For details see Leaflet No. 15.

RELIGION. The Navaho faith is very complicated. There is no supreme God. The Woman who Changes—probably Nature—shares power with her sister the White Shell Woman, the Sun and the twin brothers, often called War Gods. After these leaders come a host of minor deities, both male and female, called yei (yea). The ancestors of many animals are worshipped as divine. There are innumerable small local gods, the spirits of rocks, springs, canyons, etc. On the evil side are several alien gods of vast size, corresponding to the giants and ogres of Europe, and the devils (chindee) which inhabit every dead body. These evil beings are not worshipped.

CEREMONIES. In connection with the worship of their gods the Navaho practise a wide variety of ceremonies, lasting from a few hours to nine days. The great ceremonies are usually conducted for the healing of one person, though everyone

within reach attends. These gatherings are the occasion for prayers for the general welfare of the people. Minor rites exist for almost every phase of human activity, such as planting, harvesting, marriage, travel, etc. Most of these ceremonies are conducted indoors by shamans or priests, and consist of prayers, songs, and the use of sand paintings, sacrificial and other paraphernalia. Open air dances in masks and costumes occur in connection with the longer ceremonies. Now social dances are quite common.

MUSIC, almost entirely vocal, plays a very important part in the life of the Navaho. There are traditional songs for every conceivable activity or situation in daily life and thousands of songs connected with the religious practises of the people. As many as two hundred songs, some long and involved, go with one ceremony. Great importance is attached to the exact rendition of these songs. In addition to these traditional songs the Navaho are constantly improvising new melodies. With few exceptions men are the singers of the tribe. Their singing is characterised by a very high quavering falsetto.

SAND PAINTING. This term is applied to the pictures made from colored sand on the floors of the medicine lodges during the different ceremonies. They are from three to twelve feet across and are made by spreading dry pigments in five colors on a smooth sand bed. The colors are white, red, yellow, black and blue-grey. The paintings depict divine beings and objects connected with them. One to a dozen men do the work. The pictures must be made and destroyed in one day. The pictures are destroyed in the evening by applying pinches of the colors to the sick person.

GAMES. Archery, dice and stick games, hidden ball, hoop and pole, cat's cradle, quoits, shinny, foot racing, horse racing and various equestrian exercises are the principal amusements of the Navaho. Cards and baseball have been learned from the whites.

TRIBAL ORGANIZATION. The tribe is divided into clans, of which about 50 have been listed. These in turn are grouped into phratries, of which there are about ten. These larger groups are not very strongly organized. Descent is through the mother. Marriage must be out of the mother's clan. There is no head chief. Each locality has a leading man, who holds his position by wealth, oratory and wisdom. Their authority is not great. In recent years a tribal council has been organized, with leading men acting as representatives of the different parts of the widespread reservation. Women have a very considerable power in the affairs of the tribe. The medicine men in general do not seek political power.

CUSTOMS. Childbirth is accompanied by family rejoicing and religious ceremonies. The children are brought up by the mother till the age of about six, when the father takes over the education of the boys. Now many of the children go to Government schools. Marriages were formerly arranged for the young people. The native wedding called the "basket ceremony," which was attended with feasting, gift giving and religious practises, is now giving way to white civil or religious marriages. Polygamy, legally outlawed, is still kept up to a small extent. The dead are greatly feared, and after a hasty burial in or near the hogan the family abandon the dwelling. Hospitality is stressed. The people are quiet with strangers, but among themselves are very cheerful and animated.

Compiled from the following sources by Jean Allard Jeançon and F. H. Douglas:

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1. Navaho Silversmiths—Matthews. 2nd Annual Report, 1880
2. Navaho Weavers—Matthews. 3rd Annual Report, 1881
3. The Mountain Chant—Matthews. 5th Annual Report, 1883
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7. Many short articles listed in the General Index. Geo. Banta Publishing Co., Menasha, Wis., 1930
8. Franciscan Fathers Ethnologic Dictionary. St Michael's, Ariz., 1910.
9. The Navaho Indians—Coolidge. Houghton Mifflin, 1930
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Pictures: 1-6, 8-11; colored plates: 3, 4, 6, 10. Very full bibliography: 9. Information on every phase: 8 and 9.

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DISTRIBUTION OF SMOKING METHODS, ADAPTED FROM WISSLER,
"THE AMERICAN INDIAN"

Leaflet No. 22

April, 1931

Reprinted July 1967

AMERICAN INDIAN TOBACCO
VARIETIES, CULTIVATION, METHODS OF USE

TOBACCO (*Nicotiana*) is a plant native of the Americas. The early explorers found the Indians using it wherever they went. The sub-arctic regions of Canada were the only parts of our continent where no tobacco grew. There are about 70 species of *Nicotiana*, of which fourteen grew in North America. Only nine of these were used to any great extent by the Indians.

1. NICOTIANA RUSTICA, a hardy variety with a yellow flower, was used in all of the eastern half of the United States and Canada, the eastern edge of the plains being the western limit of the area and the southern section of Canada the northern limit.

2. NICOTIANA ATTENUATA occupied the largest extent of territory. It grew wild all over the southwest and the southern part of the plains area and was cultivated in the northern section of the plains up into western Canada and on the Northwest coast.

3. NICOTIANA MULTIVALVIS was the variety found in the Oregon-Washington area and in Idaho and western Montana. It was the plant raised by the Crow.

4. NICOTIANA QUADRIVALVIS was grown by the earth lodge people along the Missouri in North Dakota. It was used by other tribes further south on the Missouri, who also probably used the varieties raised east and west of them, 1 and 2.

5, 6, 7. NICOTIANA BIGLOVII. Three varieties of this species grew in three different parts of California and provided tobacco for most of the California tribes. The Hupa, in the northwest part of the state, cultivated one variety.

8. NICOTIANA TRYGONOPHYLLA was used only by the Havasupai, living in a canyon tributary to the Grand Canyon of Arizona.

9. NICOTIANA TABACUM, the species now used throughout the world, was a native of Mexico, the West Indies and northern and eastern South America. It was introduced into Virginia by the early English colonists, and spread from there all over the country.

CULTIVATION

The very large majority of these plants were cultivated for ceremonial use only, so that production was small. The Tobacco Nation, an Iroquoian tribe living in western New York, alone raised the crop for sale. Tribes who raised no tobacco and who were unable to pick it wild, got as much as they could by trading with more fortunate nations, or else depended on substitutes, the smoke rather than the tobacco being the essential part of the ceremonial usage.

Information on the methods used by the Indians in cultivating tobacco is very limited. Notes on the practices of widely scattered tribes show a wide range of agricultural methods. The plant was usually grown in small patches, apart from other crops. The amount of labor expended before and after planting depended on the climatic conditions. In favorable localities very little was done, the seeds being merely thrown on the ground to take care of themselves. Where the climate was more severe greater care was taken. The ground was dug before planting, the seed was arranged in rows and time was given to cultivating and thinning the plants. In some cases brush or grass were burned on the ground

to be planted before the seed was sowed, apparently to keep down the growth of weeds. Tobacco cultivation was usually the work of the men.

PREPARATION. There was as much variation in the preparation of the plant for smoking as there was in its cultivation. The general practice was to dry the plants in the sun or over the fire and then to crush or chop them into very small bits. There was much tribal variation in the use of the plant, some burning the whole and other preferring only the leaves or some other part. In some cases each part of the plant was used for a different purpose.

MIXING of other plants with tobacco was very common. All tribes did not grow it and many were only able to obtain a very small amount by trade. In the eastern half of the continent the tribes smoked a preparation called "kinnikinnick", an Algonkin word meaning "that which is mixed." The common ingredients were tobacco, sumac leaves and the inner bark of the dogwood. There were many variations to this formula. In the plains area gum, sumac, bearberry and the bark, leaves and roots of two kinds of willow were used. The Pueblo people added various herbs, while on the Pacific coast manzanita leaves and the Jimson weed were preferred. In addition to these more common materials almost every kind of leaf and bark was used. Sometimes even insects were added.

METHODS OF USE

PIPE SMOKING was the predominating method of consuming tobacco in the United States and Canada.

PIPES are of two types, called tubular and elbow. The former has the bowl and the mouthpiece on the same plane and resembles a modern cigar holder; the latter has the bowl set more or less at right angles to the stem, like any pipe of white manufacture. The tubular pipe was used throughout the southwest, on the Pacific coast, and in the plateau area between the plains and the west coast. The elbow pipe was found everywhere east of the plains area. To a limited extent it was used in the southwest and in southern California. In historic times it has come into use in Alaska and British Columbia, where smoking was not originally practised, by way of Asia. As a makeshift, and according to some native traditions before pipes were invented, smoking was done through a reed thrust, from one side, into a small hole in the ground, in which tobacco or some substitute had been placed.

CIGARETTES were confined to the Pueblo tribes of the Southwest. Nowadays the smoking of machine made cigarettes has spread everywhere among the Indians. The native cigarette had two forms. One had a corn husk wrapper containing a much smaller quantity of tobacco than is found in a modern cigarette, and the other was made of a section of hollow reed stuffed with tobacco. Hundreds of reed cigarette butts have been found in southwestern ruins.

The Peyote religious cult, which originated in the southwest, and which involves the ceremonial smoking of cigarettes, has carried this form of smoking among many tribes who were once exclusively pipe smokers.

CIGARS were confined to the West Indies and northern and central South America.

CHEWING was the specialty of the Northwest coast Indians, but was also practised to some extent by the tribes farther south on the Pacific. Before chewing the tobacco was mixed with shell lime.

INFLUENCE ON EUROPE. The smoking customs of the Indians have had a lasting effect on those of Europe. The English explorers learned smoking from the pipe users of the eastern United States and have since been a race of pipe smokers. The Spanish, Portuguese and other Mediterranean races, having learned of tobacco from the cigar and cigarette smoking tribes of the West Indies, Mexico and South America, still prefer these methods of using the plant.

CEREMONIAL USE. Tobacco was very intimately connected with the complicated religious systems of the Indians. Relatively few tribes smoked for pleasure only. Almost no ceremony or undertaking, either public or private, was conducted without the accompaniment of the offering of smoke from a pipe. With a good many tribes this connection with ceremony began with the planting of the tobacco seed. This phase reached its highest development among the Crow.

The two most common uses of smoke in connection with either religious, political or social ceremonies were the blowing of the smoke by the priest to the world quarters, and the passing of the pipe, usually from left to right, around the council circle. The decoration of the pipe bowl and stem, and even the grip used in holding the pipe, were of great ceremonial importance.

PRESENT CONDITION. It is not exactly known how many tribes are still growing their own tobacco, but it is probable that the industry is still carried on by a few of the northern plains tribes, by certain of the central Algonkin groups and by the tribes on the upper Missouri. Commercial tobacco grown by the whites was introduced among the Indians at a very early date and has largely supplanted the native varieties.

Compiled from the following sources by F. H. Douglas:

FIELD MUSEUM OF NATURAL HISTORY, CHICAGO

1. Use of Tobacco Among the North American Indians—Linton Anthropology Leaflet 15. 1924
2. Use of Tobacco in Mexico and South America—Mason Anthropology Leaflet 16. 1924

UNITED STATES NATIONAL MUSEUM

3. Pipes and Smoking Customs of the American Aborigines—McGuire Annual Report, 1897

AMERICAN ANTHROPOLOGIST

4. Aboriginal Tobaccos—Setchell. Vol. 23, p. 397

AMERICAN MUSEUM OF NATURAL HISTORY, NEW YORK
Anthropological Papers

5. The Tobacco Society of the Crow Indians—Lowie. Vol. 21, pt. 2

BUREAU OF AMERICAN ETHNOLOGY

6. Articles on Tobacco and Smoking. Bulletin 30, pt. 2

Technical botanical notes, 4. Pictures of pipes, 1 and 3. Historical notes, 6. Ceremonial notes, 5. Notes on cultivation and preparation, 1.

DENVER ART MUSEUM

DENVER, COLORADO

Department of Indian Art

NORMAN FEDER

Curator



PLAINS TRIBES AND LOCATIONS

American Museum of Natural History

Leaflet No. 23

May 1931

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THE PLAINS INDIAN TRIBES LOCATION, POPULATION AND CULTURE

THE PLAINS INDIANS are the members of those tribes whose names and the extent of whose range are shown by the map on the cover.

CULTURE. "The chief traits of this culture are the dependence on the buffalo or bison, and the very limited use of roots and berries; absence of fishing; lack of agriculture; the tipi as a movable dwelling (see Leaflet 19); transportation by land only, with the dog and the travois (in historic times with the horse); want of basketry and pottery; no true weaving; clothing of buffalo and deerskins; a special bead technique; high development of work in skins; special rawhide work (parfleche, cylindrical bag, etc.); use of a circular shield; weak development of work in wood, stone, and bone. Their art is strongly geometric, but, as a whole, not symbolic; social organization tends to the simple band; a camp circle organization; a series of societies for men; sun dance ceremony; sweat house observances, scalp dances, etc." "The American Indian"—Wissler.

LOCATION. The names on the map give the approximate centers of the ranges of each tribe in the 19th century, but it must be remembered that all the tribes wandered far and wide over the area. Most of these tribes seem to have come originally from the northeast, only reaching the Plains area a few hundred years ago at the most.

The rest of this leaflet is devoted to a list of the tribes which were in any way connected with the Plains culture, giving their linguistic stock, present locations, population, and degree of full bloodedness.

POPULATION CHANGES. Approximate estimates indicate that the tribes listed in this leaflet numbered about 125,000 early in the 19th century; that they declined steadily in numbers until roughly the turn of the century, numbering then about 55,000; and that since then there has been a steady increase to about 70,000. A considerable part of this increase, however, is due to the admixture of white blood.

TRUE PLAINS TRIBES

The following tribes are those among whom the Plains culture above described reached its fullest development.

ARAPAHO (Ah-ráh-pah-ho) Algonkin linguistic stock. 1930 population about 1800, an increase since 1910. 92% full blood in 1910. The northern Arapaho live on the Wind River or Shoshoni reservation in west central Wyoming and the southern group shares a reservation with the Cheyenne in west central Oklahoma.

ASSINIBOINE (As-sí-ni-boin) Siouan linguistic stock. 1930 population about 2300. 63% full blood in 1910. About half the tribe lives on the Stoney reserve in Alberta. The remainder lives on the Fort Peck and Fort Belknap reservations in northern Montana.

BLACKFOOT. Algonkin linguistic stock. 1930 population about 5,000, an increase since 1922. 55% full blood in 1910. There are three divisions of the tribe. The Sik-sik-a, or Blackfoot proper, and the Blood, or Kainah, live in southwestern Alberta. The Piegan (Pee-gan) live in northwestern Montana, with a few in Alberta.

CHEYENNE (Shéye-én) Algonkin linguistic stock. 1930 population about 3,400, and slightly increasing. 87% full blood in 1910. The northern group live on the Tongue River reservation in south central Montana, and the southern group with the Arapaho in Oklahoma.

COMANCHE (Ko-mán-chee) Shoshonean linguistic stock. 1930 population about 1,900. There has been a steady increase since 1905. 63% full blood in 1910. The tribe lives on the Kiowa reservation in southwestern Oklahoma.

CROW. Siouan linguistic stock. 1930 population about 2,000, an increase since 1910. 69% full blood in 1910. The tribe lives on the Crow reservation in south central Montana.

GROS VENTRE (Grow Vawntr) or **ATSINA** (Aht-see-nah). Algonkin linguistic stock. 1930 population about 650, with a steady slight increase. 76% full blood in 1910. The tribe lives on the Fort Belknap reservation in north central Montana.

KIOWA (Kéye-o-wah) Kiowan linguistic stock. 1930 population 1,950 with a considerable increase in recent years. 72% full blood in 1910. The tribe now lives on the Kiowa reservation in southwestern Oklahoma. Long associated with the Kiowa is the small band of Athabaskan **Kiowa-Apache**, 175. They are not part of the southwestern Apache.

TETON SIOUX (Tée-ton Soo) Siouan linguistic stock. 1930 population about 22,000. 75% full blood in 1910. The Teton is the largest division of the Sioux or Dakota tribe. It is split into many bands, which are now living on five reservations, Cheyenne River, Pine Ridge, Rosebud, Lower Brule in South Dakota and Standing Rock in both North and South Dakota.

VILLAGE TRIBES ON THE EAST

These tribes had many features of the true Plains culture, but depended much more on agriculture for food and tended to live in permanent villages of earth lodges (see Leaflet 20) a large part of the time.

ARIKARA or REE. Caddoan stock, 465 in 1930, slightly increasing. 85% full blood 1910. Fort Berthold reservation, North Dakota.

HIDATSA or MINITAREE. Siouan stock. 664 in 1930, slightly increasing. 76% full blood in 1910. Fort Berthold reservation, North Dakota.

IOWA. Siouan stock. 451 in 1930, slightly increasing. 24% full blood in 1910. The larger number live in Kansas, the rest on the Shawnee reservation in Oklahoma.

KANSA or KAW. Siouan stock. 479 in 1930, slight increase of mixed bloods. 30% full blood in 1910. Kaw reservation, Oklahoma.

MANDAN. Siouan stock. 291 in 1930, slightly increasing. 79% full blood in 1910. Fort Berthold reservation, North Dakota.

MISSOURI. Siouan stock. About a dozen in 1910. The survivors, if any, live on the Oto reservation in Oklahoma.

OMAHA. Siouan stock. 1,575 in 1930, slight steady increase. 80% full blood in 1910. Omaha reservation, northeastern Nebraska.

OSAGE. Siouan stock. 3,332 in 1930, considerable increase of mixed bloods. 43% full blood in 1910. Osage reservation, Oklahoma.

OTO. Siouan stock. 664 in 1930, slight steady increase. 63% full blood in 1910. Oto reservation, Oklahoma.

PAWNEE. Caddoan stock. 844 in 1930, steady increase. 86% full blood in 1910. Pawnee reservation, Oklahoma.

PONCA. Siouan stock. 1,161 in 1930, slight increase. 53% full blood in 1910. About one-third on the Ponca reservation in Nebraska and the rest on the Ponca reservation in Oklahoma.

SHIOUX (Eastern). Siouan stock, about 12,000 in 1930. About 70% full blood in 1910. The six divisions and many bands of the eastern Sioux live on a number of reservations in the Dakotas and Nebraska.

WICHITA. Caddoan stock. 597 in 1930, considerable increase. 97% full blood in 1910. Kiowa reservation, Oklahoma.

PLATEAU TRIBES ON THE WEST

These tribes were less developed ceremonially and politically than the true Plains tribes, but carried basketry making much farther. To a considerable extent they lived in pit lodges dug in the earth.

BANNOCK. Shoshonean stock. About 450 in 1930. 78% full blood in 1910. Fort Hall reservation, Idaho.

NEZ PERCE. Sahaptin stock. 1,400 in 1930. Slight decrease. 77% full blood in 1910. Fort Lapwai reservation, Idaho.

SHOSHONI. Shoshonean stock. About 3,800 in 1930. 87% full blood in 1910. Wind River reservation, Nevada; Fort Hall reservation, Utah; Western Shoshone reservation, Nevada.

UTE. Shoshonean stock. About 2,000 in 1930, slight decrease. 94% full blood in 1910. Southern Ute reservation, Colorado and Uintah reservation, Utah.

NORTHERN TRIBES

The small Athabaskan tribe of the Sarcee, and those bands of the Algonkin Cree and Ojibwa, or Chippewa, which live to the north of the Plains culture area, have much in common with the Plains tribes, as well as with the Canadian tribes to the north who have a somewhat different culture.

Compiled from the following sources by F. H. Douglas:

UNITED STATES CENSUS 1910

1. Indian Population in the United States and Canada

DEPARTMENT OF THE INTERIOR

2. Reports of the Commissioner of Indian Affairs 1922-1930

BUREAU OF AMERICAN ETHNOLOGY

3. Handbook of American Indians—Bulletin 30

SMITHSONIAN INSTITUTION

4. The Aboriginal Population of America North of Mexico—Mooney Miscellaneous Collections V. 80, No. 7. Washington 1928.
5. The American Indian—Wissler. Oxford University Press (American branch) 2nd Edition 1922

DENVER ART MUSEUM

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NORMAN FEDER - Curator



CENTRAL PLAINS CLOTHING
Smithsonian Institution

LEAFLET 24
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PLAINS INDIAN CLOTHING

1. THE PLAINS INDIANS are those tribes which lived between the Rocky Mountains and the Missouri-Mississippi valley from southern Texas to central Alberta and Saskatchewan. For tribal names, present locations and general culture see Leaflet 23. For hide-dressing and beadwork see Leaflets 2 and 73-74, painting, Leaflets 77-78 and house types, Leaflets 19 and 20.

2. INTRODUCTORY. The clothing described in this leaflet is that used in the 19th century by those tribes which carried the peculiar culture of the area to its highest development, see Leaflet 23. The tribes in the eastern and western parts of the area wore clothing in general similar, but with some variations. After about 1850 clothing adopted from the Whites was worn to an increasingly large extent by both sexes. The older clothing survived principally for wear on ceremonial occasions.

3. SOUTH TO NORTH VARIATION. Plains clothing varies greatly in degree of ornamentation from south to north. Southern Plains clothing is marked by an almost complete lack of any type of decoration except fringing. The use of fringes of all types is highly developed among the southern tribes of the area and reaches its peak in the twisted variety, the finest made and most attractive looking of all fringe types.

On the northern Plains, on the other hand, many elaborate types of clothing decoration were the rule. These are bead and quill embroidery, the use of human and animal hair and white fur; and of feathers.

Paint was used throughout the Plains area. Solid colors seem to have predominated in the South, while detailed designs, both abstract and more or less realistic, appear to have been more frequent in the central and northern sections. Another generally used type of decoration, the tin jingler, was more common in the South.

The tribes of the central Plains occupied a middle ground in the matter of decoration and used plain or elaborate types according to their position in relation to the North or South.

MEN'S CLOTHING

4. HEADGEAR. Hats were not worn indoors or in good weather. In winter the northern tribes wore animal skin caps. Some central groups, especially the Arapaho, wore rawhide eye shades, and some southern groups wore, on dress occasions, straight-sided fur caps with open crowns. Participants in ceremonies used many kinds of decorations on the head, usually of feathers, fur, hair, quills or beads.

5. THE WAR BONNET was, with few exceptions, worn only by certain highly placed leaders on important occasions of war or peace. The right to wear it was only granted to a man after great services to his people, and at such times it was made for him and presented with solemn accompanying ceremonies. It was worn as much for protection by magic and as a mark of courage as for adornment. It was very decidedly not worn by every man. Women might wear the war bonnet under certain ceremonial conditions, but children never had the right. It was not worn with equal frequency by all tribes on the Plains or their borders and not at all in other parts of the country, though feathers arranged in other ways were widely used as head decorations. Use of the war bonnet reached its full development only after the acquisition of the horse. 1800 may be set as the beginning of this development. The present custom of men and women of all tribes north of Mexico of wearing this headdress on every occasion when they are on view is directly due to White influence.

Two special types of war bonnet should be mentioned. Among the Blackfoot and other far northern tribes the feathers in the head band stood straight up instead of sloping back as elsewhere. The caps of some bonnets in the

central and north sections were trimmed with white fur and a pair of horns instead of with eagle feathers. Bonnets of this type seem to have been used principally if not exclusively by medicine men and are usually called "doctors' bonnets."

6. BODY COVERINGS: THE ROBE. Customarily the principal body covering was a robe made of a whole buffalo skin, in most cases dressed with the hair on. It was discarded only in times of strenuous activity or in very warm weather. In cold weather the hair side was out. When worn, the robe was put on in any way which suited the wearer's convenience, but the tail was customarily on the right. Robes were frequently decorated on the flesh side with painted designs—see reference 5; with narrow rows of quill or bead embroidery; or with broad quilled or beaded bands often set with discs. After the introduction of machine-made cloth by the traders wool blankets replaced buffalo robes and were frequently ornamented with the broad bands referred to above.

7. BODY COVERINGS: THE SHIRT. This garment was once worn very little but became increasingly popular as time passed. In form shirts ranged from those with a simple poncho-like pattern made of one skin to complex types made of two or three skins cut into sections and sewn together. Older shirt patterns were more simple than later ones except in the extreme northern section where tailoring of the upper part of the garment developed at an early date. In the earlier shirts the legs of the skins were left dangling at the bottom and the sides and sleeve seams were left open. Later the bottom might be square cut and the sides and sleeve seams closed. At front and back of the neck hung a flap, usually triangular but in the North frequently squared. The main regional variations in decoration are indicated in section 3. Certain outstanding local styles may, however, be indicated here. A prominent feature of northern and central shirts in the use of quilled or beaded bands over the shoulders and down the sleeves. Older northern shirts are extremely long and have painted decorations, stripes or life forms, usually in black. Long fringes from the shoulders and a small section of fringe at the elbow are typical of southern Plains shirts.

8. BELTS made of a narrow strip of skin were always worn around the waist to support the breechcloth, and the tops of the thigh-length leggings when these were worn. Belts were usually undecorated. Pouches, knife sheaths and the like were hung from them.

9. BREECHCLOTH. This article was never omitted by any man. It was originally made of soft tanned skin, but later cloth ones came into use. The breechcloth was 4 to 6 feet long and about a foot wide. It passed between the legs and tucked under the belt in front and back. The ends hung down from the belt like narrow aprons. Breechcloths worn during ceremonies often reached to the ankle or ground and were decorated.

10. LEGGINGS reached from the ankle to the thigh and were held in place by tying thongs attached to their tops to the belt. Leggings were not worn all the time. They were made from single deer or antelope skins and finished with fringes on the outer side. Decoration was done by painting or by sewing on long strips of beaded or quilled skin or cloth. Blue or red flannel replaced skin in most cases in the last quarter of the 19th century. When worn a pair of leggings look much like trousers with the seat cut out.

11. FOOTWEAR. The common type of Plains moccasin was ankle-height, had a hard sole and a soft upper with a tongue. Many northern and Mississippi Valley tribes, however, wore a soft-soled moccasin. There are a number of patterns involving different numbers of skin pieces, and each tribe had, to some extent, cuts peculiar to itself. For winter use some tribes used moccasins of buffalo skin with the hair inside. Moccasins were decorated with quill or bead embroidery and by painting. Moccasins with solidly beaded or quilled uppers are almost restricted to the central tribes, though these also used less decorated types. All moccasins were not decorated. They were cut in lefts and rights and often had skin fringes trailing from the heels.

WOMEN'S CLOTHING

12. HEADGEAR was not worn by women under ordinary circumstances. In recent times they have adopted the practice of occasionally covering the head with a shawl or silk handkerchief. Ceremonial head coverings existed for women.

13. BODY COVERINGS: THE DRESS reached from the shoulders to between the calf and ankle. There are two main construction types: in one, two animal skins are sewn together up the sides and across the top, leaving arm and neck openings; in the other there is a bodice-sleeve unit made of one or more skins sewn or tied at about waist height to a skirt cut from two or more skins. The first type is restricted to the central and northern tribes while the second is used by all tribes in the area. Except among the Crow—in recent years at least—the sleeves are cape-like and of varying lengths and widths and either open on the bottom or tied with thongs. The Crow sleeve is sewn and tight-fitting. The shape of the sleeves and the cut of the dress bottom vary from tribe to tribe.

The most easily recognizable regional variations are in the decorations of the bodice and sleeves. In the South decoration was absent or limited to narrow painted or beaded edgings. Among the central tribes the bodice and very large cape-sleeves were almost or completely covered with solid beading. The northern tribes used a more or less broad band, usually containing parallel stripes in two or more colors, which followed the curves on the bottom of the bodice and sometimes ran out on the cape-sleeves. Fringes in the various regional styles—section 3—were cut into or sewn on around the edges of the garment. Beads, quills, rows of pendant thongs, elk teeth, shells, tin jinglers, etc., were sewn on the skirts of the dresses to suit tribal custom or the whim of the wearers.

After the introduction of commercial cloth by traders some changes were made in the cut of the dresses, but in general they followed the old styles.

14. BODY COVERINGS: THE ROBE of buffalo hide was also worn by women but was usually smaller and lighter than that of the men. Women's painted robes can be identified by their designs which are not those used by men. The latter had sunburst patterns or representations of war or hunting scenes, while the women's robes had a more or less elaborate oblong design across the shoulders and a broad stripe around the edge.

15. LEGGINGS. The woman's legging reached from ankle to knee and was kept in place by a garter tied around the leg above the calf. Some tribes tucked the ankle flap of moccasin up under the legging, while others, especially in the South, made the moccasin and legging in one piece. Some of these southern boot-moccasins had a long flap which hung from the knee to the middle of the calf. Most leggings have been made of cloth for many years. Quill, bead, fringe and paint decorations were used, following the regional styles outlined in section 3.

16. MOCCASINS. Women's moccasins were like those of the men except in those cases noted in section 15 where they were combined with the leggings.

17. BELTS were worn around the waist over the dress. They were wider than those worn by the men, and were decorated with beads, brass nails and discs. Pouches, bags, etc., hung from the belt.

18. CHILDREN wore little or nothing in their early years and later dressed in small replicas of their parents' garments.

19. MISCELLANEOUS. Fur mittens were sometimes used in the North. Beads, ribbons, small mirrors and other shiny articles were worn to a large extent. Each ceremony had special costumes. Membership in various societies was indicated by the wearing of distinctive regalia. Famous warriors wore feathers and other objects as indications of their brave deeds. Men wore breastplates of long, slim bone beads strung horizontally in parallel rows. Women strung the same type of bead in vertical parallel rows reaching from the neck to below the waist.

Compiled by F. H. Douglas and Alice L. Marriott from the examination of specimens, field notes and from the following sources:

AMERICAN MUSEUM OF NATURAL HISTORY, NEW YORK

1. Costumes of the Plains Indians—Clark Wissler. *Anthropological Papers*, v 17, pt 2, 1915.

2. Structural basis to the decoration of costumes among the Plains Indians—Clark Wissler. *Anthropological Papers* v 17 pt 3, 1916.

3. North American Indians of the Plains—Clark Wissler. *Handbook* No. I, 1934.

SMITHSONIAN INSTITUTION, WASHINGTON

4. Indian costumes in the United States National Museum—H. W. Krieger. *Annual Report* for 1928, pp 650-656, plates 20-29, 1929.

STANFORD UNIVERSITY, PALO ALTO

5. Plains Indian painting—John C. Ewers, 1939.

6. The book of Indian crafts and Indian lore—Julian H. Salomon. Harper and Bros., New York, 1928. Valuable for instructions about making various kinds of Plains clothing.

DENVER ART MUSEUM

DENVER, COLORADO

Department of Indian Art

RICHARD G. CONN, CURATOR



MENOMINI INDIANS

Museum of the American Indian, Heye Foundation

Leaflet No. 25

June 1931

3rd Printing, June 1957

THE MENOMINI INDIANS
A WOODLAND TRIBE

LOCATION. The Menomini, or Menominee, Indians are an agricultural and hunting people of Algonkin linguistic stock, now living on a reservation in north central Wisconsin, west of Green Bay. The 1930 population was about 1,950, which is an increase over former years and probably about equal to that of pre-white days. But only half are of full Indian blood. Full tribal bloods are very scarce, as the tribe has much intermarried with neighboring Algonkin and Siouan tribes.

NAME. Menomini is an anglicized abbreviation of the Algonkin word Manomanewuk, meaning "Wild Rice Men," the wild rice plant *Zizania Aquatica* being a very common food of the tribe.

HISTORY. The tribe anciently lived on Green Bay, Wisconsin, where it was first discovered by Nicollet in 1634. Until 1763 it was under the French, helping them in war and being always friendly. Much of their aboriginal culture was lost in this period. Under the British there was not quite as much friendliness, but aid was still given in war and no moves were made to join enemy groups. In 1817 the first treaty was made with the United States. This was followed by other agreements, which led to the establishment of the present reservation in 1856. Here the tribe has remained at peace ever since.

PHYSIQUE. Originally they were of medium size with very light skins.

DWELLINGS. There are two principal types of dwellings. In winter the tribe lived in domed huts made of arched over poles covered with reed mats. Sometimes canvas replaced the mats. A low door and a smoke hole were the openings. A low bench ran around the wall and a fireplace was built in the center of the floor. The summer house had a rectangular frame of poles, with a peaked roof, covered with overlapping sheets of elm or cedar bark. It also had a door, smoke hole, fireplace and bench. Its construction was much like that of the Iroquois Long House described in Leaflet 12. The ceremonial lodge was like the winter house except in size and shape. It was 50 to 70 feet long, 20 feet wide and 7 or 8 feet high in the center. Nowadays most of the tribe live in frame or log cabins.

CLOTHING was once made of deerskin. The men wore shirts, breech cloths and leggings, and the women shirts and skirts. All were ornamented with quills, beads, or painted designs. The men wore fur turbans, braided sashes or deer hair roaches on the head. The women wore beaded cloth or skin head bands, with long beaded streamers. The ancient large back combs of wood have long been replaced by those of German silver. Both sexes wore soft soled moccasins, some with a broad U shaped vamp to which the bottom was sewed, and other with a seam running up the instep.

For many years, except on ceremonial occasions, the men have worn shirts and trousers of white make, and the women cloth waists, wrap around skirts, shawls and leggings. The waists are of the tight fitting Winnebago type or the beruffled variety of the Potawatomi (Ref. 4, plate 32). They are often decorated with many round brooches of silver and with silk ribbon in appliqué designs. These ribbons are also sewed on the other articles of clothing.

FOOD. Wild rice, corn ground with mortar and pestle, squash, many berries, roots, nuts and fruits made up the vegetable part of the diet in the old days. The deer was the chief source of meat, but all other game found in the locality was hunted for food. Fishing was highly developed and important, the large lake sturgeon being an especially valuable catch. Part of the food supply was dried for winter use. Boiling and roasting were the common methods of cooking. Much maple

sugar was made and eaten. Long white domination has done away with most of the old foods.

BASKETRY is not well developed. From eastern tribes they have learned to make checker, twilled and wicker baskets from hardwood splints. A few coiled baskets are made from sweet grass and trimmed with quills.

BEADWORK.* Colored glass beads, all of white make, are woven in several technics on wooden frames or sewed on skin or cloth with the spot stitch (see Leaflet 2). Belts, garters, head bands, square bags with broad shoulder bandoleers, moccasins, leggings, bags, and many small ornaments are made of beads or are trimmed with them. The designs are of two kinds, either highly conventionalized life forms, chiefly floral, or very realistic floral designs adopted from the neighboring Ojibwa.

BIRCH BARK is made into many different sorts of containers, the "mocock" is the most usual form, a truncated pyramid with rounded edges, ranging in size from small trinket boxes to large storage bins. Sap buckets and various dishes are also made. Many of these articles are decorated with porcupine quill designs.* Formerly canoes were made of birch bark, but their use has been abandoned in the last fifty years.

YARN BAGS.* Flat, more or less square bags have long been woven. Formerly they were made from vegetable fibre and trimmed with buffalo hair, but for a long time they have been made with commercial yarn. They are woven downward on a frame of two vertical sticks. Rather few colors are used in the designs, which are a mixture of purely geometrical units and conventionalized life forms. Bags of similar shape, for hulling corn, are made from cedar bark.

YARN SASHES are braided from many colored yarns. They are in several lengths and widths and very often have a design showing a continuous series of points.

MATTING* is made from reeds and cattail-flags. The reed mats are plaited on a vertical frame, simple geometrical designs in a few colors being used for decoration. They are for floor or bench coverings or for interior wall lining. Cattail mats are made by sewing the flags together with basswood fibre string. They are used to cover the domed winter houses. Checker and twilled cedar bark mats no longer exist.

STRING is made mostly from the inner bark of the basswood, though elm and cedar bark and nettles are also used. The fibre is twisted, smoothed by pulling through a small hole, and rolled into balls.

METALWORK. Formerly native copper was worked. Now brooches, bracelets, rings, ear-rings and bangles are made from German silver.

WOODWORK. Bowls and spoons of wood were formerly very common. Boxes, canoes, combs, mortars and pestles, grave boxes and markers and brooms are other wooden articles.

POTTERY was once made from clay tempered with powdered clam shells. The pot was molded around a ball of twine, which was pulled out when the clay was dry. Pottery making ceased at least one hundred years ago.

RELIGION. Above the flat earth are four levels, the homes of the good gods. The Supreme Being lives in the top layer while the other three are the homes of bird-like dieties, the Thunder-bird war gods being the most important. The Evil gods live in four levels below the earth. The most powerful, the Great White Bear, lives on the bottom. Above are the Underground Panther, the White Deer and the Horned Serpent. Numberless good and bad spirits are everywhere. Manabus, the Great Hare or Great Dawn, a child of the Sun, is the culture hero, about whom many of the myths and religious practices are built. Most of the latter are attempts to placate the evil beings by sacrifices, and to gain power from the good gods through dreams. There are medicine men and women. There is much belief in witchcraft. Only a few of the tribe cling to the old faith. The peyote cult is weak.

CEREMONIES. The only great ceremonies now surviving are those of the Medicine Lodge or Mitawin, and of the Dreamers. The former is an annual affair conducted during several days by the members of the society in the large ceremonial lodge mentioned above. It consists of a dramatization of the origin myth with accompanying use of ceremonial bundles, songs, prayers, sacrifices, magical performances and initiation of new members of both sexes. For a list of obsolete ceremonies see reference 2, page 74.

TRIBAL ORGANIZATION. There are several phratries, each divided into clans named for animals or birds from which the members are supposed to be descended. There is an hereditary head chief* a lineal descendant of the first Menomini, whose creation is described in the origin myth. Oshkosh, 1795-1850, was the best known leader. There is a tribal council made up of the clan and phratry leaders, who also meet in separate councils. These chiefs were civil only, the war command being in the hands of men to whom power had come through dream revelations.

MUSIC. There are many songs of all kinds. They are accompanied by the water drum of the medicine lodge, the huge, elaborate drum of the Dreamers, the hand drum or tambourine and by gourd or turtle shell rattles. Flutes and whistles are used ceremonially and in courting.

GAMES. Lacrosse, shinny, horse and foot racing, a game to test one's good temper by submitting to kicks from the opposing team, snow-snake and throwing sticks were the more strenuous games. There were various dice and stick gambling games and small amusements such as cat's-cradle and cup-and-ball.

TRANSPORTATION. There was much travel on water in birchbark and dugout canoes until the latter part of the 19th century. Horses were used for riding and packing, but not extensively. Travel on land was along forest trails, loads being carried with burden straps over chest or forehead. Snowshoes were used in winter.

CUSTOMS. Children were born in a special lodge and placed on cradle boards. Names were given by medicine men and later changed after some brave deed. Marriages, with accompanying gift giving, were arranged by parents out of the clan. Descent is through the mother. Divorce was for adultery or by mutual consent. Polygamy was once practised. The dead are buried with much ceremony, after a wake held around the finely dressed body. Later a wooden box is built over the grave. There are many beliefs about ghosts. Mourning is long and severe. The people were peaceful, but were famous fighters when necessary. Warriors counted coup and wore eagle feathers for foes slain. Since chastity was held to be a strictly personal possession, promiscuity was not condemned and was quite common.

PRESENT CONDITION. Because the people are government wards and have been well protected against preying whites they are quite prosperous and healthy. Most of the men are farmers or lumbermen. To a large extent the ways of the white men have been adopted. Nearly all are Roman Catholic.

Compiled from the following sources by F. H. Douglas:

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1. The Menomini Indians—Hoffman. 14th Annual Report, 1892
2. The Menomini—Mooney and Thomas. Bulletin 30. Handbook of American Indians, Vol. 1, p. 842
3. The Wild Rice Gatherers of the Upper Lakes—Jenks. 19th Annual Report, part 2, 1898

MUSEUM OF THE AMERICAN INDIAN, HEYE FOUNDATION, NEW YORK

4. Material Culture of the Menomini—Skinner. Indian Notes and Monographs, Misc. No. 20, 1921
5. Medicine Ceremony of the Menomini—Skinner. Indian Notes and Monographs, Vol. 4, 1920

AMERICAN MUSEUM OF NATURAL HISTORY, NEW YORK

6. Menomini Societies, Ceremonies and Myths—Skinner. Anthropological Papers, Vol. 13, in three parts, 1913-1915.

MILWAUKEE PUBLIC MUSEUM

7. Dream Dance of the Menomini—Barrett. Bulletin Vol. 1, Art. 4, 1911

For pictures, 1, 4, 5, 7; details of clothing and houses, 1, 4; designs, 4; bead and quill technics 1, 4.

*In June, 1931, the Menomini Indian Agent gave the following facts: The head chieftanship no longer exists; bead and quill work and silk applique are still made to a small extent; yarn bag and mat making are gone.

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IROQUOIS DOMESTIC SCENE

DRAWN BY JESSE CORNPLANTER, A SENECA, IN 1905
New York State Museum

*Leaflet No. 26
June, 1931*

IROQUOIS FOODS

IROQUOIS. This name is given to the tribes which made up the League of the Five Nations: Cayuga, Mohawk, Oneida, Onondaga and Seneca. Once they all lived in New York State, but for many years about two-thirds have lived in Ontario, Canada. Most of the Oneida live in Wisconsin. The population is about 16,000. The American group is about 55 per cent full Indian blood. For details of their history and dwellings see Leaflet 12.

MEALS. Until the abandonment of the communal Long House (A), about 1800, the general custom was to serve but one meal a day, about the middle of the morning. When all were assembled the women dipped portions for the men into wood or bark bowls, and served themselves when the men were through. But the pot was simmering all day, so that anyone could eat at any time. As white influence became stronger this custom began to die. Now each family has its own cabin and eats three meals a day. Hospitality to friends and strangers alike was very strongly stressed.

COOKING used to be done in clay pots—later of brass or iron (B)—over an open fire, in the ashes, or by grilling in the flames. But ordinary cook stoves have long been used.

CORN is and always has been the principal food. Several dozen varieties of four kinds of maize are used. All are subdivisions of the species *Zea mays*. They are starchy or bread corns, flint or hominy corns, sweet corn and popcorn. Other varieties are sometimes found.

PREPARATION. Most of the crop is gathered when ripe, husked and stored by hanging bunches, made by braiding the husks, from the rafters or drying poles (C). To remove the hulls the grains are boiled with ashes and then shaken in a special hulling basket (D) of splints. Meal is ground by the mortar and pestle method. The mortars (E) are sections of logs with a cavity in one end. The pestles (F) are maple poles about 4 feet long and 3 or 4 inches across. A section in the center is carved down to a size convenient for grasping. The meal used to be sifted in flat basket sieves (G), now replaced by those of metal wire.

RECIPES. Corn bread is made by boiling flat round cakes of dough or by baking them in the ashes or on flat stones. These two types of bread have many varieties, due to ways of cooking and to the addition of beans, berries, meat, etc. The boiled bread was usually sliced and eaten with oil, fat or sugar. Butter is now used. For the hunter or traveler the shelled grains were parched and ground into meal with maple sugar. This meal, which was eaten raw or with a little water, had wonderful nutritive value and staying power. In the early days it was universally used and praised by white and Indian alike. Hominy or sagamite was also very common. It was made by hulling the corn by pounding and winnowing and then boiling the meal with water into a mush or thick soup. Green corn on the cob is boiled and roasted, and after shelling, is made into several kinds of soup and bread. Mixtures of corn and other foods, especially beans in the dish called succotash, are still common and numerous.

BEANS are a very important source of food. Several dozen varieties, mostly of the genus *Phaseolus*, have been collected. The Indians divide them into two groups, those used for soup and those mixed with meal in bread making. There are several recipes for green beans in the pod. Shelled beans are boiled, fried, made into soup and mixed with meat, other vegetables, and very commonly with corn meal.

SQUASH was as important a food as corn and beans. The three were usually planted together and were known as "The Three Sisters." Considerable mythology and ceremony were connected with them. Six or seven varieties of squash and pumpkin were cultivated, as well as cucumbers and water and musk melons. They were boiled, baked and fried. Squashes were sliced and dried for winter use. Cucumbers were pickled in brine. Squashes were mixed with meal in breadmaking and dried pumpkins were ground into meal for cakes. Squash flowers were boiled with meat to make a sauce.

GREENS are made of the following: milkweed, waterleaf, marsh marigold, yellow dock, pigweed, lamb's quarters, mustard, purslane, dandelion, burdock, nettle, skunk cabbage, leek, wild garlic, wood betony, sensitive fern. Watercress, peppermint, oxalis, sheep sorrel, leek, wild garlic and the fresh shoots of grapevine, sumac, raspberry and pine were eaten raw. Maple bark was sometimes pounded into meal for bread. Cornstalks were sucked for sweetness.

ROOTS of the yellow pond-lily, Solomon's seal, Indian turnip and skunk cabbage were used long ago. Roots which are perhaps still used are crinkle or pepper root, groundnut or wild potato, burdock, arrowhead, cattail, artichoke and spring beauty. While the common potato was long known to the Iroquois they do not seem to have used it much until fairly recent times. All these roots were eaten raw or cooked or were pounded into meal.

EDIBLE FUNGI are still eaten extensively by the Iroquois. The common mushroom, the morel, the puffball and several species of the Polyporus fungus are the kinds used. They are usually peeled, cut up if large and boiled. Sometimes they are fried after boiling a while. Lichens were only eaten in times of great want. When boiled they formed the "rock tripe" of the early explorers. They have not been used for a long while.

NUTS were important, especially when other crops failed. Quantities were stored against such emergencies. Now they are usually only eaten in the winter as a treat. The nut gathering season, in the fall, was a happy time, as parties of young people made holiday gatherings out of the harvesting trips. Hickory and chestnuts were the most valued. Other kinds used are acorns of several types, beechnuts, black walnuts, butternuts and hazel nuts. The nuts were cracked with special sets of stones and the meats crushed and boiled. The oil was skimmed off and used as a sauce. The meats were mixed with other foods. The Seneca powdered nuts and dried bear or deer meat for baby food. Sunflower seeds were boiled for their oil.

BERRIES have always been favorite foods. They were eaten as gathered, crushed and used as sauces or mixed with other foods, or dried for winter use. Strawberries, raspberries, gooseberries, currants, blueberries, cranberries, june berries, mulberries, squawberries, elderberries, and wintergreen were the most common varieties.

FRUIT. Apples, cherries, plums, grapes, pawpaws, and mandrakes were all eaten very extensively. After the coming of the whites peaches, pears and quinces were added to the list. Apples were preferred. They were eaten raw, boiled and baked. For winter use they were stored in bark barrels or sliced and dried.

MEAT. Nearly all animals and birds except the carnivores were killed for food. Meat seems to have been rather scarce. The meat of deer, bear and the larger animals was fried after boiling, or broiled. The oil was highly valued as medicine. Much meat was dried. Beaver, skunk, woodchuck, muskrat, rabbit and squirrel were all eaten. Dogs were eaten at ceremonial feasts. In addition to all the common game birds, owls were eaten. Birds eggs were frequently consumed. Frogs legs and turtle meat were used for food. Pork, beef, etc., are now used quite generally.

FISH were important and much eaten. All varieties were cooked in many ways when caught, or dried for later use. Crayfish, clams and other mollusks have always been favorite foods. Several kinds of insects were once eaten. Ants, locust grubs, waterflies and wasps are mentioned by the historians.

MAPLE SUGAR has always been an important article of diet. In the early days it was mixed into almost every kind of dish as a substitute for salt. The sap of the maple, and also of the birch, was much used as a beverage and mixed with food. Honey came into use after the arrival of the whites.

SALT was used but little, if at all, by the tribes when discovered, even though New York State has large stocks of salt. Reasons for this non-use are largely guesswork. In later years the use of salt as seasoning gradually increased. Now it is used by all.

BEVERAGES. Water was the most common drink. As much of the Iroquois food was liquid or semi-liquid, such as soups or thin stews, not much water was drunk with meals. Many drinks were made from berry juice. Corn and nuts of several kinds were roasted and boiled to make drinks. Birch and maple sap were favored drinks. Infusions of many plants were made up. Hemlock leaves, birch twigs, sassafras, winter-green, yarrow, witch-hazel, raspberry twigs, sumac seeds and horse-mint were all used this way. Very rarely maple sap was fermented as an intoxicant. Wine-making or the brewing of corn liquor were not known.

Compiled from the following sources by F. H. Douglas:

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1. Iroquois Foods and Food Preparation—Waugh. Memoir 86, Ottawa, 1916

NEW YORK STATE MUSEUM, ALBANY

2. Iroquois Uses of Maize and Other Food Plants—Parker. Bulletin 144. 1910

AMERICAN ANTHROPOLOGIST

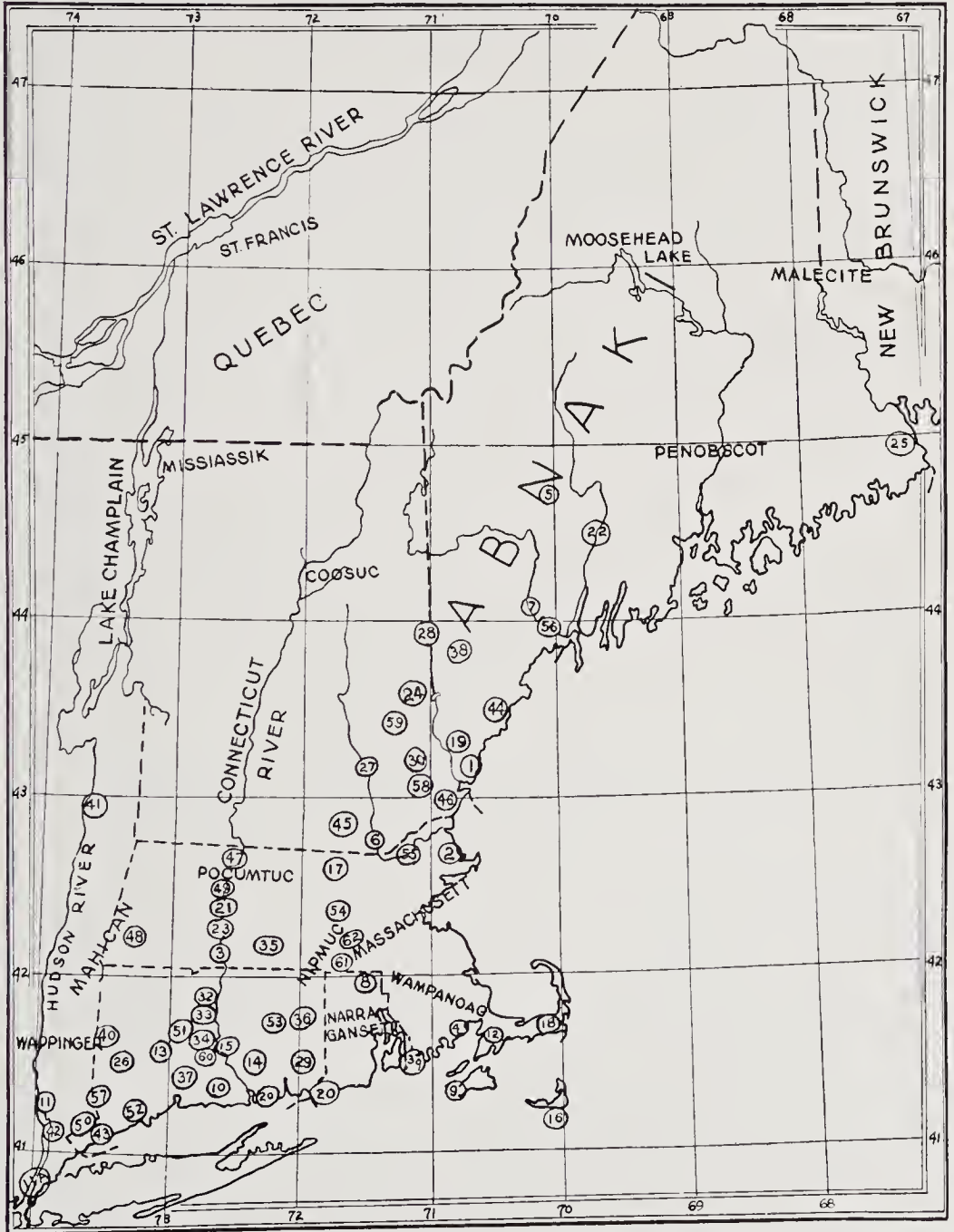
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4. The League of the Iroquois—Morgan. H. M. Lloyd's edition, Dodd-Mead, 1922

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Leaflets 27 and 28.

July, 1931

THE NEW ENGLAND TRIBES

NAMES AND LOCATIONS

Reprinted July 1967

ALGONKIN. All of the New England Indians were members of this linguistic stock, the largest in extent of territory in North America.

TRIBAL ORGANIZATION. Owing to the early disappearance of most of these Indians and to the faulty observation of early writers, exact information is lacking as to which of the following groups were true tribes and which were merely branches of larger groups, so that it is impossible to give an exact picture of the situation when this area was discovered. The following list certainly contains the names of the most important groups. But it is quite possible that some of the small bands have been omitted.

CONFEDERACIES. It was the custom of many of these small bands to join in loose groups under the leadership of one strong tribe. The Abnaki, Pennacook, Pocumtuc, Nipmuc and Wappinger confederacies are those most commonly mentioned, though the Massachusetts, Wampanoag and Mohegan-Pequot also seem to have headed organizations of this sort. Membership in these confederacies is shown in this leaflet thus: "Malecite. Abnaki group."

POPULATION. In 1921 James Mooney of the Bureau of Ethnology estimated that in 1600 there were 25,000 Indians in New England. Other investigators have doubled this figure, but probably without justification. Today there are perhaps 2900-3000 survivors of these tribes. 1750 Malecite, Penobscot and Passamaquoddy, of quite pure Indian blood, live in the neighborhood of their original homes in Maine, Quebec and New Brunswick. About 500 survivors of several tribes, much mixed with white and negro blood, live at Gay Head, Mashpee and in very small groups scattered through southern New England. About 350 remnants of many tribes, mostly Abnaki, live at or near St. Francis, Quebec. In Wisconsin are 300 Stockbridge Mahicans and about the same number of the Brotherton group of survivors of several tribes.

NAMES. The attempts of writers and explorers of three nations to spell the names of the tribes they encountered in New England resulted in a very widely differing lot of spellings. The spelling used in this leaflet is that of the Bureau of Ethnology. In the Handbook of American Indians, Bulletin 30 of the Bureau of Ethnology, under the headings of each tribe mentioned, will be found most of the different ways of spelling the tribal names.

CAUSES OF DECLINE. Disease seems to have been the principal cause of the rapid disappearance of the New England Indians. In 1617 eastern Massachusetts and the southern coast was swept by a fever which destroyed thousands. In 1632-33 smallpox invaded southern New England and killed most of the survivors of the 1617 epidemic. Wars with the whites were responsible for the destruction of other thousands. The Pequot war of 1637, King Philip's war of 1675-76 and the 18th century wars on the Maine border were the principal conflicts. A system of bounties for Indian heads or scalps increased the slaughter. Slavery was common. Drink and ceaseless pressure by the colonists did for most of the rest. Only in Maine did the Indians hold out at all successfully, principally because they were under the protection of devoted French missionaries.

CONTACT WITH WHITES. While it is probably true that the Norsemen in 1000 were the first white men to touch New England, the first European to establish any contact was the Italian Verrazano,

who in 1524-25 touched along the coast from Maine to New York. During the 16th century several vessels explored the Maine coast. Not until the very early 17th century were permanent settlements made. The French filtered into Maine from the north, and remained predominant there until the end of their power in America. The English, notably the Pilgrims of 1620, made their settlements along the coast from Maine to New York. In 1609 the Dutch landed at New York and pushed their influence up the Hudson and east into Connecticut.

LOCATIONS. The encircled numbers assigned to each tribe indicate the approximate center of the area belonging to it. All of the Indians wandered through the neighboring country on hunting and fighting expeditions. This is especially true of the Indians on the coast of Maine, who traveled all through the country lying inland. The absence of Indians in Vermont is due to the fact that this mountainous area was a barrier between the New England Algonkins and the New York Iroquois. Both parties hunted in it, but neither made permanent settlements.

ABNAKI, ABENAQUI, WABANAKI 'east land'. These and other variants of the same name are applied to all of the tribes living in Maine and north and east into Canada and New Brunswick. In the strictest sense the name is given to the Norridgewock band.

ACCOMINTA (1) 'shore line'. Pennacook group. A small tribe formerly living near the present York, York Co., Maine. As a tribe they disappeared early.

AGAWAM (2) 'fish curing place'. Pennacook group. A small tribe which lived near the present Ipswich, Essex Co., Mass. A few survived until 1726.

AGAWAM (3). A small tribe which lived on Long Hill, near the present Springfield, Hampden Co., Mass.

AGAWAM (4). A small tribe which centered around the present Wareham, Plymouth Co., Mass.

AMASECONTI (5) 'abundance of small fish'. Abnaki group. A small tribe which lived near New Sharon, Franklin Co., Maine. In 1797 the remnant moved to St. Francis, Quebec.

AMOSKEAG (6) 'one takes small fish'. Pennacook group. A small tribe formerly living by the Amoskeag Falls of the Merrimac river in Hillsboro Co., N. H.

AROSAGUNTACOOK (7). Abnaki group. Originally the tribe lived near Lewiston, Androscoggin Co., Maine. They were in many wars with the English. In 1725 they moved to St. Francis, Quebec.

COOSUC 'at the pine'. Pennacook group. They lived in Coos and Grafton Cos., N. H. along the upper Connecticut river. In 1704 they moved to St. Francis, Quebec. The tribal name still existed in the early 18th century.

COWESET (8) 'place of small pine trees'. A small band which lived in northern Rhode Island, west of the Blackstone river.

ETCHIMIN. This is an old name for the Malecite and Passamaquoddy living along the St. John's and St. Croix rivers on the Maine-New Brunswick border.

GAYHEAD (9). A village on the west end of Martha's Vineyard, since the 17th century the home of a group of Wampanoag. The present population is about 200. Few if any are full blood.

HAMMONASSET (10). A small band which lived on the Hammonasset river near the present Guilford, Middlesex Co., Conn.

KITCHAWANK (11) 'at the great mountain'. Wappinger group. A small tribe on the east shore of the Hudson from the Croton river to Anthony's Nose. They had a village at Peekskill, but the main town was at the mouth of the Croton River.

MAHICAN 'wolf'. A large tribe formerly holding both banks of the Hudson river and western Massachusetts. About 1730 bands of the tribe began to move west and to lose their identity. Only the Stockbridge band now living in Wisconsin has kept the tribal name.

MALECITE. Abnaki group. This tribe formerly roamed the country around the Maine-New Brunswick border. About 700 now live in New Brunswick and 100 in Quebec.

MANHATTAN (11A) 'the hill island'. Wappinger group. The Indians of Manhattan Island. The island was only hunting territory, the main village being on the site of Yonkers. After selling their land to the Dutch they disappeared from history.

MASHPEE (12) 'great pool'. This is the name of a village in Barnstable Co., Mass., established in 1660 for Christian Indians of many tribes. About 100 still live there. There is much negro blood in the group.

MASSACHUSETT 'at the great hill'. A large tribe, numbering about 3,000 when discovered, which lived in the eastern part of Massachusetts. Wars with the Abnaki and pestilence so reduced them that they had disappeared as a tribe by about 1650.

MATTABESECE (13) 'at a large brook'. A large tribe formerly centering about Wethersfield, Conn., and extending quite widely in all directions, especially to the west. They controlled many of the small tribes near them.

MISSIASSIK or **MISSISQUOI**. Abnaki group. They formerly lived along the Missisquoi river in northern Vermont. In 1730 about 800 of them moved to St. Francis, Quebec.

MOHEGAN (14) 'wolf'. This group, once numbering over 1,000, centered in the valley of the Thames river, Conn. Under the celebrated Uncas they were, about 1676, the leading tribe in the region. Under white pressure they rapidly diminished, the survivors centering about Mohegan and Norwich, Conn. At present there are about 125 mixed bloods. The Brotherton band of Wisconsin has some Mohegan members.

MONTOWESE (15) 'little god'. A branch of the Mattabesec, once living near Middleton, Middlesex Co., Conn., on the Connecticut river.

NANTUCKET (16). Two tribes, numbering about 1,500, lived on the island in 1642. By 1809 only a handful were left.

NARRANGANSETT 'people of the small point'. A large tribe which centered in Rhode Island. They escaped the great pestilence of 1617 and were increased by remnants of other tribes. Despite other losses from sickness they numbered 5,000 in 1674. King Philip's war in 1675

broke up the tribe, the survivors fleeing in all directions. A few returned to join the Niantic near Charleston, R. I. Some joined the Brothertons. In the east there are a few survivors living with the Mohegan near Norwich, Conn.

NASHUA (17) 'the land between'. Pennacook group. A tribe once living around Lancaster, Worcester Co., Mass. The tribe was nearly destroyed in King Philip's war. Most of the survivors fled west to the Mahican.

NAUSET (18). A tribe which lived on Cape Cod east of Bass river. Until about 1710 they kept their early number of about 500, but thereafter began to decrease. By 1802 all were gone. The tribe was always friendly to the English colonists.

NEWICHAWANOC (19). A small tribe once living about the site of the present Berwick, York Co., Maine. The tribe early became extinct.

NIANTIC (20) 'a point of land on an estuary'. A small tribe with two divisions, one between the mouths of the Thames and Connecticut rivers and one on the coast at the Rhode Island-Connecticut border. The survivors of the eastern branch merged with the remaining Narragansett after King Philip's war. The remnants of the western branch joined in the Brotherton group. A few descendants of the eastern branch live with the Mohegan.

NIPMUC 'freshwater fishing place'. A large tribe or group of bands formerly living in the south part of Worcester Co., Mass., and the adjacent parts of Connecticut and Rhode Island. The survivors of King Philip's war fled to Canada or to the Mahican.

NONOTUC (21). Pocumtuc group. A small band which lived on the site of the present Northampton, Hampshire Co., Mass. They disappeared after 1677.

NORRIDGEWOCK (22) 'people of the still water between rapids'. Abnaki group. A tribe once centering near the present Norridgewock. Somerset Co., Maine, and extending up and down the Kennebec river. It was the most characteristic group of the Abnaki confederacy. They fought for the French and after 1754 moved to St. Francis.

NORWOOTUC (23). A tribe which lived in the Connecticut river valley near the present South Hadley, Hampshire Co., Mass. After King Philip's war they seem to have joined the Mohawk.

OSSIPEE (24) 'lake made by river widening'. Pennacook group. A small tribe which lived on the Ossipee river and lake in Carrol Co., N. H., and Oxford Co., Maine.

PASSAMAQUODDY (25) 'plenty of pollock'. Abnaki group. This tribe has always lived around Passamaquoddy bay on the Maine-New Brunswick border. The present population is about 500, mostly located at Point Pleasant, Washington Co., Maine.

PAUGUSSET (26) 'where the narrows open out'. Wappinger group. A tribe of 700 or 800 which centered around the junction of the Housatonic and Naugatuck rivers. They decreased rapidly and after 1752 lived at Scaticook, near the present Kent, Conn.

PENNACOOK (27) 'at the bottom of the hill'. The chief tribe of the confederacy of the same name, once living on the Merrimac river up

and down from Concord, N. H. After 1676 they fled to the New York Scaticook and to St. Francis, Quebec. Descendants of the latter still live at St. Francis.

PENOBSCOT 'plenty stones'. Abnaki group. An important tribe which lived around Penobscot bay and in the valley of the Penobscot river. Some lived to the north on Moosehead lake. They controlled a large area and were at war till 1749. Since then they have remained peaceful. They are now about 450 living on the river north of Bangor, Maine.

PEQUAWKET (28) 'at the hole in the ground'. Abnaki group. A small tribe which lived on the headwaters of the Saco river in Carroll Co., N. H., and Oxford Co., Me., centering near the present Fryeburg, Me. After 1725 they moved to the headwaters of the Connecticut, where some were still known to be about 1800.

PEQUOT (29) 'destroyers'. An important tribe located around New London, Conn., and under the chief Sassacus in control of eastern Connecticut. The population was about 3,000. In 1637 a disastrous war with the English broke up the tribal unity, the survivors scattering far and wide. Today a few dozen mixed bloods live in the state.

PISCATAQUA (30). Pennacook group. A small tribe, long extinct, which lived near the present Dover, Stafford Co., N. H.

POCUMTUC. A large, important tribe which centered around the present Deerfield, Franklin Co., Mass., and controlled the Connecticut valley. After King Philip's war they fled to Scaticook, N. Y., and after 1754 moved to St. Francis, Quebec.

PODUNK (32) 'a neck of land'. A small tribe formerly living in north central Hartford Co., Conn. They disappeared after King Philip's war.

POQUONNOC (33) 'a clearing'. A small tribe, closely allied with the Podunk, which lived near the present Windsor, Hartford Co., Conn.

PYQUAG (34) 'open country'. A small branch group of the Mattabesec, whose village was near the present Wethersfield, Hartford Co., Conn.

QUABAUG (35) 'red pond'. Nipmuc group. A tribe formerly living near the present Brookfield, Worcester Co., Mass. They disappeared after King Philip's war.

QUINEBAUG (36) 'long pond'. Nipmuc group. A tribe which lived along the Quinebaug river north of the present Jewett City, New London Co., Conn.

QUINNIPIAC (37) 'long water people'. Wappinger group. A tribe whose principal village occupied the site of the present New Haven, Conn. Never numerous, they vanished before the Revolution.

ROCAMECA (38) 'on the land upstream'. Abnaki group. A small tribe formerly living along the Androscoggin river on the border of Oxford and Franklin Cos., Maine.

SACONNET (39). A small tribe which lived on Sakonnet point, Newport Co., R. I. Once numbering about 500, they had become extinct by the early 19th century.

SCATICOOK, CONN. (40) 'at the river fork'. An Indian village near the site of the present Kent, Litchfield Co., Conn. It was established

in 1730 by Gideon Mahwee, a Pequot, for the survivors of small neighboring tribes. It never became large, but has persisted until today, though only a few mixed bloods now survive.

SCATICOOK, N. Y. (41). A Mahican village at the junction of the Hoosac and Hudson rivers in Rensselaer Co., N. Y. to which fled refugees from many of the New England tribes broken by King Philip's war. In 1702 there were 100 inhabitants. Shortly after they began to move to St. Francis, Quebec. By 1760 all had moved.

SINTSINK (42) 'at the small stone'. Wappinger group. A small tribe which centered around the present Ossining, N. Y.

SIWANoy (43) 'salt people'. Wappinger group. A large tribe located on the coast from New York to Norwalk, Conn., and inland to White Plains.

SOKOKI (44) 'people at the outlet'. Abnaki group. A tribe which once occupied the banks of the Saco river, York Co., Me., near its mouth. After King Philip's war some fled to Scaticook, N. Y. In 1725 the remnant moved to St. Francis, Quebec.

SOUHEGAN (45). Pennacook group. A tribe which once lived near the site of the present Amherst, Hillsborough Co., N. H.

SQUAMSCOT (46). Pennacook group. A small tribe formerly living near the site of the present Exeter, Rockingham Co., N. H.

SQUAWKEAG (47) 'red earth'. Pocumtuc group. A tribe which occupied both sides of the Connecticut river in the neighborhood of the present Northfield, Franklin Co., Mass.

STOCKBRIDGE (48). A Mahican village on the Housatonic river in south central Berkshire Co., Mass. In 1785 the inhabitants moved to the Oneida reserve in New York and in 1833 to the Menominee in Wisconsin with the Oneida and Munsee. In 1856 the present reservation inland from Green Bay, Wis., was occupied. The population is about 300.

SUKIAUG (49). A tribe which lived until 1730 around the site of the modern Hartford, Conn.

SAINT FRANCIS. An Indian village near Pierreville, Yamaska Dist., Quebec, established by Catholic missionaries in the 17th century. To it fled the broken remnants of the New England tribes. There are now about 300 inhabitants, mostly of Abnaki blood.

TANKITEKE (50). Wappinger group. A small tribe formerly living back from the coastline in Westchester Co., N. Y., and Fairfield Co., Conn.

TUNXIS (51) 'the point where the river bends'. Wappinger group. An important tribe once living in the neighborhood of Farmington, Hartford Co., Conn. As a tribe they had disappeared before the Revolution.

UNCOWA (52) 'beyond'. Wappinger group. A small tribe formerly living about Fairfield, Fairfield Co., Conn.

WABAQUASSET (53). A small tribe once living in Windham Co., Conn., west of the Quinebaug river, near the present Woodstock.

WACHUSET (54) 'at the small mountain'. Pennacook group. A small tribe which centered around the present Princeton, Worcester Co., Mass.

WAMESIT (55). Pennacook group. An important tribe which lived on the south bank of the Merrimac river near Lowell, Middlesex Co., Mass. In 1686 they moved to St. Francis, Quebec.

WAMPANOAG 'eastern people'. A very important tribe which centered in Bristol Co., R. I., but controlled all of southeast Massachusetts except Cape Cod. Massasoit was the head chief in 1620. His son was the King Philip who led the New England Indians against the English in the war of 1675-77, which was so fatal to the natives. The remnants of the tribe joined the Saconnet. Several hundred mixed bloods now survive, mostly at Gay Head.

WAPPINGER 'easterners'. An important tribe, the leader of the confederacy of the same name. They formerly lived in the neighborhood of Poughkeepsie. Despite destructive wars they remained until 1756, after which the survivors joined the Delaware or the Stockbridge.

WAWENOC (56) 'people of the bay country'. Abnaki group. A tribe which once lived about the mouth of the Kennebec river in Lincoln and Sagadahoc Cos., Maine. By 1750 all had moved to Canada, principally to Becancour, 30 miles east of St. Francis. A few dozen survivors still live in the neighborhood.

WECQUAESGEET (57) 'end of the marsh'. Wappinger group. A tribe which centered around the present Dobbs Ferry, N. Y. and stretched east to Norwalk, Conn. They were all killed off in the 17th century.

WINNECOWET (58). Pennacook group. A small tribe formerly living in Rockingham Co., N. H.

WINNIPISAUKE (59). Pennacook group. The tribe which once lived around the lake of the same name in central New Hampshire.

WONGUNK (60) 'at the bend'. Wappinger group. A small group which lived near the present Chatham, Middlesex Co., Conn.

WUNNASHOWATUCKOOG (61) 'people at the fork of the river'. Nipmuc group. A tribe which lived on the banks of the Blackstone river in southern Worcester Co., Mass.

WUSQUOWHANANAWKIT (62) 'at the pigeon country'. Nipmuc group. A small tribe living near the above, in central Worcester Co., Mass.

Compiled from the following sources by F. H. Douglas:

BUREAU OF AMERICAN ETHNOLOGY

1. Handbook of American Indians. Bulletin 30. Vols. 1 and 2
2. Wawenock myth texts from Maine—Speck. 43rd annual report 1928
3. Native tribes and dialects of Connecticut—Speck. 43rd annual report 1928

MUSEUM OF THE AMERICAN INDIAN, HEYE FOUNDATION, NEW YORK

4. Territorial boundaries of the Wampanoag, Massachusetts and Nauset Indians—Speck. Indian Notes and Monographs No. 44 1928
5. Notes on the Gay Head Indians of Massachusetts—Tantaquidgeon. Indian Notes Vol. 7, No. 1, 1930

SMITHSONIAN INSTITUTION

6. The Aboriginal Population of America North of Mexico—Mooney. Misc. Collections Vol. 80, No. 7
7. The Red Man in the United States—Lindquist. Doran, 1923

Information on all tribes, 1: detailed maps, 3 and 4: photographs, 2, 3, 4, 5.

MUSIC, principally in the form of songs, has always played a very important part in the lives of the American Indians. The carrying on of almost every form of human activity was formerly accompanied by singing; and even today, despite the advance of white civilization, thousands of songs are still performed. To a very great extent, singing is connected with religion; and, since the Indian introduces his native religion into almost everything he does, it follows that one or many songs accompany nearly every action. The basic idea of singing seems to be that by means of it the Indian is able to add to his own inherent magical powers some portion of that mysterious power which fills all things in nature. For a further discussion of this idea see reference 1, page 62.

The greater number of Indian songs are sung to the accompaniment of instruments which produce a strongly marked beat, such as the drum, the rattle, and the notched resonator or morache; evidently because rhythm is associated in the Indian mind with the supernatural.

DRUM. There are three main types of this instrument. (1). The small hand drum, which usually has but one head, but which may have two. (2). The large two-headed drum, commonly made of wood. (3). The water drum, a keg shaped article equipped with a single removable head and containing a certain amount of water.

The hand drum (A) is made by stretching a piece of hide over a circular band of wood several inches wide. The drum is usually from 10 to 16 inches in diameter. The cords which keep the head taut are tied together in the back and form a handle (B). Such a drum can easily be carried and so is commonly used where circumstances require that the drummer move about.

The large two-headed drum (C) is generally made by hollowing out a section of log and stretching skin over each end. There is considerable variation in size, from about 1 foot to 3 in height and 1 to 2½ feet in diameter. Metal kegs and washtubs, and ordinary bass drums of white manufacture are sometimes used. In the southwestern Pueblos the large drum is usually held and beaten by a single standing player, while on the plains and in the east it is placed on the ground and struck by several seated men. Sometimes the drum is suspended from stakes, held by others than the player, or supported by a group of players.

The water drum is made by hollowing out a log from one end only. Near the solid end a small hole is bored to allow the water to escape. The head is made of a large piece of skin which is held tightly in place by a hoop which fits closely to the sides of the instrument. Before playing the head is removed and water is placed in the opening. The head is then dampened and replaced. The presence of the water adds greatly to the resonance of the drum. Such drums are not very large, 18 inches being an average height. This type is most common in the north central section of the country.

The heads of nearly all drums are painted with decorative or symbolic designs. Very often these pictures are connected with something seen in a dream by its owner.

In the southwest single headed drums are made of pottery (D). On the northwest coast long wooden boxes are beaten by the heels of men seated upon them. Poles or planks and stiff flat sections of rawhide are struck by some tribes. Inverted bowl shaped baskets and half gourds also serve as drums.

DRUMSTICKS are usually made of a short slender stick with a padded knob on one end (E). Sometimes this knob is made by wrapping rags

around the stick and in other cases a bit of skin is packed with some soft material and tied in place. The Apache and Navaho use a stick with a bare end bent in a complete circle (F). Carved wooden knobs turned at right angles to the stick are found in the north central region. Some tribes use sticks without knobs and others beat with the palm of the hand.

Drum beats are arranged in many different combinations of weak and strong or slow and fast. A peculiarity of Indian music is that often the drumbeat and the voices are not together, but simultaneously maintain different times. Some of the large two-headed log drums produce two notes, one at each end, because of the difference in diameter of the log. In certain songs the drummer quickly reverses his instrument.

RATTLES are used by all tribes. The most common type consists of a hollow container filled with small loose objects and fastened on a short handle. The gourd (G) is probably the most used container. Small rawhide globes (H) are common among the Pueblos and in the plains region. The northern Woodland tribes made rattles of birchbark or elm bark (J) boxes. On the northwest coast extremely elaborate carved and painted wooden rattles are found (K). The Iroquois made rattles of turtle shells (L). In the southwest clay rattles are used (M).

Another type of rattle has a number of small objects suspended so as to strike each other or some hollow article to which they are tied. Dew claws of animals, teeth, shells, pods of plants, copper and tin jinglers and bells are all tied to sticks (N), to articles of clothing or ceremonial paraphernalia (O) so as to strike together with any motion. The Pueblo tribes tie such objects to small turtle shells (P), which are worn under one knee. Flat or castenet-shaped wooden clappers are used on the northwest coast.

NOTCHED RESONATOR. (Q) This appliance, often called by the Spanish word "morache", has two parts, a stick, long bone or similarly shaped article on which are cut a long series of quite deep notches, and a shorter smooth stick or bone, often a shoulder blade, to rub back and forth over the notches. Usually one end of the notched stick is placed on a drum, an inverted basket, a dried, hollow pumpkin rind, a sheet of iron or the like which will give resonance to the rattling of the smooth stick over the notches. The other end is held by the player. This noise making contrivance is now confined to the southwest though in one form or another it has been found in many places in the world.

FLUTE. This wind instrument is primarily used in courting but is also used with some Pueblo ceremonies. The typical form is a hollow tube, 1 to 2 inches in diameter and 1 to 3 feet long, with a boxlike contrivance bound on the top near the mouthpiece and a row of holes pierced in the top from below this box to near the end. A straight round stick of some soft straight grained wood is split in two and the halves hollowed out, except near one end where a thin bridge is left. This divides the tube into two sections, the smaller wind chamber and the long flute tube. The half tubes are tightly fastened together with resin or glue. This bridge and the box above mentioned are manipulated to produce the sound making apparatus. For details of this construction see reference 1, page 94. The holes seem to be spaced to fit the fingers rather than in accord with any scientific plan. Flutes are also made of cane, pith-filled woods and clay. The Apache use the nose flute. About a dozen soft notes can be blown on the average flute. The Hopi make a

flute bell-mouthed like a clarinet (S). The mouths of some flutes are carved into animal or bird heads (T).

WHISTLES are made from the wing bones of large birds, wood, reeds and, formerly, of quills. These latter were used by the Mandan, who tied rows of large quill whistles together like pan-pipes. The Hupa of California made pan-pipes of bone. The bone whistles, commonly from eagle wings (T), are characteristic of the medicine-men and Sun dancers of the plains tribes. They produce a single, shrill high note. The wooden instruments are long slender open tubes with a whistle mouthpiece. They produce 8 or 10 high notes and are used in courting and some dances. Reed whistles are used on the northwest coast.

FIDDLE. The Apache are the only Indian people who have evolved any sort of a stringed instrument played with a bow; but it is very likely that this was not an independent invention but rather a crude attempt to copy the violin of the Mexican. A section a foot or so long is cut from the hollow stem of the agave or aloe. Wooden disks are inserted in the ends. One or two horsehair strings are stretched along the tube over a crude bridge. One end of the tube is pressed against the player's body while a short, deeply curved bow of wood and horsehair is drawn over the strings.

MUSICAL BOW. This primitive forerunner of the jew's harp is found in many parts of the world, but in America north of Mexico only the Maidu of California make use of it. A string, wire or vine is stretched on a short bow. One end of the wood, and sometimes the string, is grasped by the teeth or held before the open mouth, which serves as a resonator. The tight string is struck by a small stick, producing a small soft sound, the pitch of which is varied by opening and closing the mouth-resonator.

BULL-ROARER. This contrivance is hardly a musical instrument, but as a noise maker it is included here. It is simply a flat piece of wood an inch or so wide and 6 to 12 inches long, to one end of which is fastened a long stout cord. When used the string and paddle are rapidly rotated at arm's length, which causes the paddle to spin so fast that a loud whirring noise is produced.

GAME CALLS. In hunting many tribes use various contrivances to imitate the calls of game birds and animals.

Compiled from the following sources by Jean Allard Jeançon and F. H. Douglas:

1. The American Indians and Their Music—Densmore. The Woman's Press, New York, 1926.
2. Article on Musical Instruments—Fletcher. Bulletin 30, Vol. 1, page 960. Bureau of American Ethnology.
3. Article on Rattles—Swanton. Bulletin 30, Vol. 2, page 355. Bureau of American Ethnology.
- 4-8. Bulletins 45, 61, 75, 80, and 90, of the Bureau of American Ethnology. Chippewa, Teton Sioux, Northern Ute, Mandan and Hidatsa, and Papago music—Frances Densmore. American Anthropologist Magazine.
9. Distribution of the Musical Bow. Vol. 11, old series, page 93.

Pictures of instruments 1-9; Analysis of drum beats, 4-8. General discussion of Indian music, 1.

DENVER ART MUSEUM

DENVER, COLORADO

Department of Indian Art

NORMAN FEDER

Curator



PUEBLO SHELL AND TURQUOISE BEADS

Leaflet No. 30 - August, 1931

PUEBLO BEADS AND INLAY
MANUFACTURE AND USES

THE PUEBLO INDIANS are a sedentary, agricultural people divided into six tribes and now living in 27 pueblos or towns in northern Arizona and New Mexico. Similar peoples have been living in this area for many hundreds of years, a fact which is proven by the great number of ruined towns in the area. In many of these ruins beads of shell, stone and turquoise have been found, showing that the use of these articles is an ancient one. For further information about these tribes see leaflets 4, 6, 8, 9, 11, 13, 14, 17 and 18.

WHOLE SHELLS were used much more commonly in prehistoric times than now. Thousands of *Olivella* (A) shells strung on yucca and cotton cords have been found in burials and house ruins. *Conus* (B) shells, either whole or cut in bell shapes, together with other varieties, are found extensively. Morris gives the following list as a representative group of shells usually found in prehistoric ruins.

Olivella volutella, *Conus*, *Haliotis*, *Pectunculus*, *Turretella*, *Cerithidea sacrata* and *Trivia solandri*. All of these come from the Pacific coast or from the Gulf of Mexico.

METHODS OF USE. *Olivella* shells often had the two tapering ends removed, leaving a barrel shaped bead. *Turretella* and *Cerithidea* were worn unbroken, being suspended from a small hole in or near the top. *Pectunculi*, also unbroken, were hung from holes in the valve hinge. Owing to the size of the *Haliotis* or abalone it was possible to cut it into many shapes, such as disk-shaped and oval pendants (C), and oval, triangular and rectangular beads. A bone backing was used in some cases. Irregular pieces of the hinges, or the crinkly, scalloped edges of large clam shells were smoothed and drilled for use as pendants. Odd tusk-shaped pieces were similarly used. Cross sections of large, oval clam and abalone shells were cut for bracelets. Dummy or double beads shaped like a figure 8, with one end solid and the other drilled, were not common, but have been found. Whole shells were used as a backing for the inlaying of turquoise and of a pink stone resembling coral. Effigies of frogs and butterflies also occurred.

DISK BEADS. From the earliest times up till very recently these Indians made thousands of small round disk-shaped beads of stone, shell and turquoise. While the art is still kept up in some of the villages, beadmakers are not as common as they were a few years ago. Today the best shell beads are made at Zuñi and at Santo Domingo, both in New Mexico. Turquoise beads are much more common now than in prehistoric times. The gem comes from mines near Kennedy, New Mexico and other native mines in the area. Both beadmaking pueblos also keep up the trade of inlaying turquoise, jet or coral in shell or wood.

MODERN IMITATIONS. Pieces of old rubber phonograph records are replacing the old black jet or lignite. Coral imported from Italy has supplanted almost altogether the reddish-pink stone seen in the prehistoric inlay. Within the last five years large quantities of Chinese turquoise have been imported and sold to the Indians, who make it into ornaments or sell it in crude lumps. A synthetic turquoise, or an enamel resembling the stone in appearance, is rapidly taking the place of the real article. It is an importation from Europe. Attempts have been made by unscrupulous traders to sell imitation shell beads made at American button factories. But neither these nor enameled wooden ~~fakes have been successfully marketed.~~

BEAD MAKING

ROUGH SHAPING. *Olivella*, clam or abalone shells are broken up into irregularly shaped bits somewhat larger than the finished bead. Once this was done with a stone hammer, but now pliers and metal hammers are coming into use.

PUMP-DRILL. (Picture on p. 46, ref. 1.) This apparatus has a central shaft, 10 to 16 inches long, to which is attached a stone or metal point. Because of their hardness the ends of steel files make ideal drills. About two-thirds down the shaft is fixed a circular disk of stone or pottery, through the center of which the shaft passes at right angles. This whorl or flywheel acts as a governor or balance to the shaft. From the top of the shaft run two buckskin thongs, which are attached to the ends of a stick which hangs suspended by them at right angles to the shaft just above the whorl, the shaft passing through a large hole in the cross piece.

DRILLING PROCESS. Before the drilling begins the buckskin thongs are wound around the shaft. The point of the drill is then placed in position on the bit of shell, and the point is made to revolve by pressing down on the cross piece, which unwraps the thongs and turns the drill. The flywheel carries on the rotary motion and wraps the thongs up the other way. So by alternately pressing down the cross piece and allowing it to rise again a continuous alternating motion of considerable rapidity is given to the point. Most beads are drilled half way through from each side. Only a few strokes are necessary to penetrate each bead.

SMOOTHING AND ROUNDING. When a number of bits have been drilled they are strung on a length of string with a knot on one end. The naked end of the string is then wrapped around the hand and the thumb pressed down on the column of rough beads until it is almost rigid. If any very irregular bits are found they are roughly rounded off with a hammer. This tight column is then either rolled back and forth over a sandstone slab by the free hand or by another piece of sandstone held in it. Some bead makers knot the string at both ends and roll the column of beads between stones held in the two hands. Water and grit are applied during the operation, which rapidly reduces the rough bits to a uniform roundness and smoothness. There is much variation in the quality of the beads. The best are perfectly round, thin, and of even thickness, while the poorest often show crinkly edges and very irregular thickness.

Turquoise beads are made in the same way, but it is a considerably longer process because of the greater hardness of the mineral. An added difficulty is the necessity of separately grinding and polishing both faces of each bead, a process which is not necessary with the shell.

SIZE. Finished beads are from one-sixty-fourth to three-eighths of an inch in thickness and from one-sixteenth to one-quarter of an inch in diameter. The thickness of the bead depends on that of the shell from which it is made. The larger beads are usually turquoise.

STRINGING. The completed beads are strung on any available string, commonly in double rows about a foot long. In necklace making strings are made in loops sufficiently long to hang well down on the chest (E). Sometimes three or four such loops are bound together at the top, so as to form one article (F). Often the beads are strung in a

taper, the smallest beads being at the top. They are often interspersed with beads or lumps of turquoise or coral, large lumps of shell and jet silver beads, and sometimes animal teeth. Short strings of turquoise, (D) often showing a few coral beads, or inlaid shell pendants are very commonly attached to the bottoms of the necklaces.

INLAY WORK. Pieces of shell wood or jet are cut to the shape of the finished article, square, oval and rectangular forms being the most common (H). If the pattern is made up of isolated pieces, shallow holes of the right size are cut into the backing. Crescents and crosses are also made. An adhesive, formerly pinyon gum, but now common glue, is applied to this backing, and in it are set small pieces of shell, turquoise, lignite or coral, cut in square, triangular or rounded forms. The designs made by these bits are always geometrical and on some of the more elaborate pieces resemble the patterns seen on pottery. Sometimes sections of shallow, clam-like shells are covered with solid masses of inlay, without pattern (G). Inlay work is applied to pendants, with or without necklaces, ear-rings, and combs. These pieces are often parts of ceremonial costumes. In pre-historic times scrapers and other bone and stone objects were inlaid. A celebrated example is the large frog effigy found in Pueblo Bonito and now in the American Museum of Natural History in New York.

BEADS IN COMMERCE. There appear to have always been definite values for strings of beads among the peoples of the southwest. Some years ago a turquoise string 6 to 8 inches long was equal to one pony, while one 12 to 15 inches long would buy four cows or eight sheep. A large chunk of turquoise weighing 8 to 10 ounces would buy three to five ponies according to its color and fineness. Among the Pueblos a good string of medium fine shell beads was worth seventy-five cents to a dollar and a half. Strings 2 feet long bring about two dollars and a half at Zuñi. Unusually fine beads were worth two to four dollars for a 12 to 15 inch string. At Zuñi turquoise beads are very highly valued, extremely fine strings bringing twenty-five to fifty dollars. All kinds of native made beads were considered heirlooms and when not buried with the dead passed from mother to daughter through many generations. Age, color and good workmanship added greatly to their value.

Compiled by Jean Allard Jeançon from the following sources:

MUSEUM OF THE AMERICAN INDIAN, HEYE FOUNDATION. NEW YORK

1. Beads and Beadwork of the American Indians—Orchard. Contributions, Vol. 11.
2. Turquoise Work of Hawikuh, New Mexico—Hodge. Leaflet No. 2
3. Hawikuh Bonework—Hodge. Indian Notes and Monographs, Vol. 3, No. 3

AMERICAN MUSEUM OF NATURAL HISTORY, NEW YORK

4. The Aztec Ruin—Morris. Anthropological Papers, Vol. 26, No. 1
5. Pueblo Bonito—Pepper. Anthropological Papers, Vol. 27

BUREAU OF AMERICAN ETHNOLOGY, WASHINGTON

6. Archeological Expedition into Arizona—Fewkes. 17th Annual Report
7. Two Summers Work in Pueblo Ruins—Fewkes. 22nd Annual Report

UNITED STATES NATIONAL MUSEUM, WASHINGTON

8. A Study of the Primitive Methods of Drilling—McGuire. 1894 Annual Report

General information about beads, 1; Colored pictures of inlay, 2; Details on prehistoric beads, 4-7; Pictures of drills, 8.

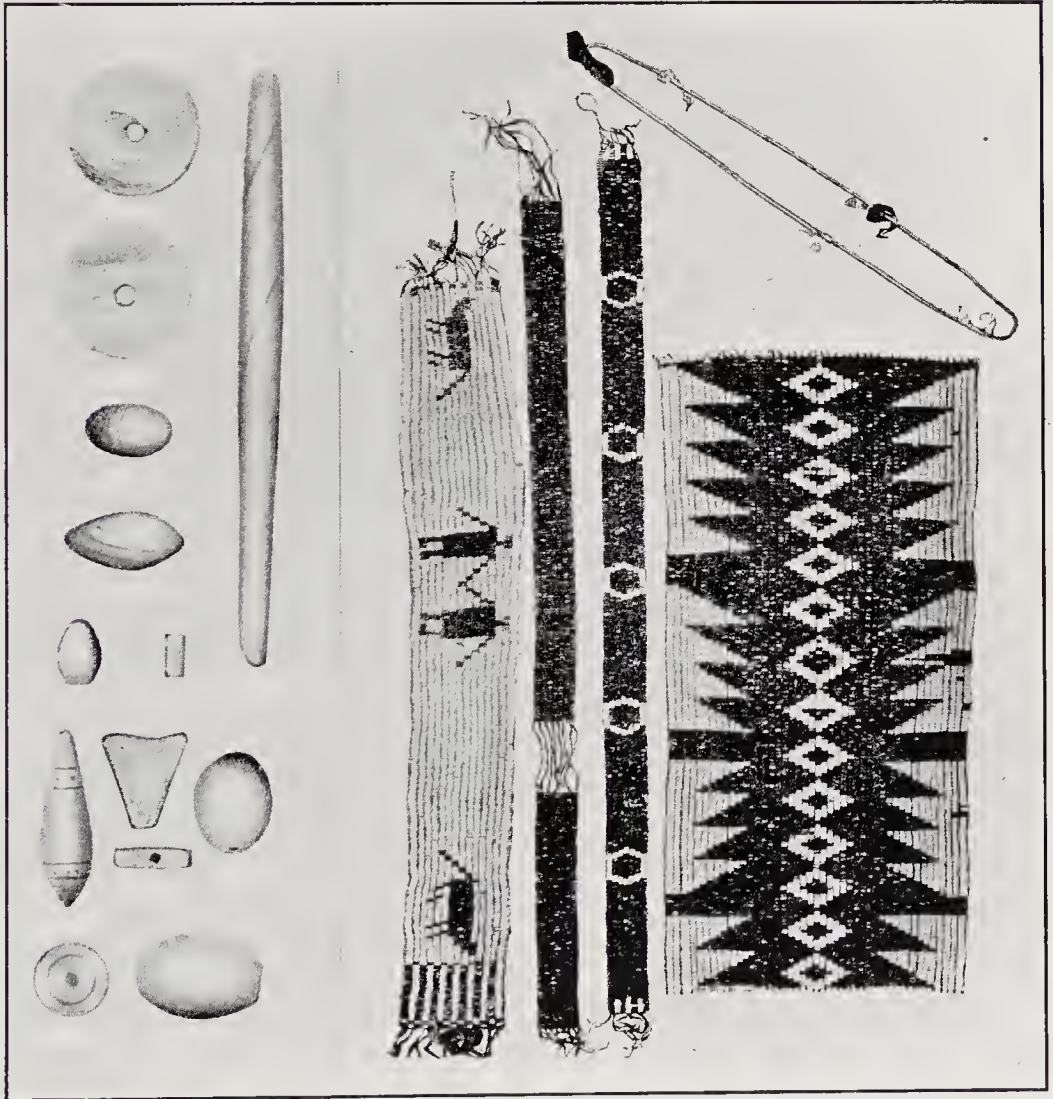
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NEW YORK STATE MUSEUM

Leaflet No. 31 - September, 1931

IROQUOIAN AND ALGONKIN WAMPUM

MANUFACTURE AND USES

Reprinted July 1967

WAMPUM. This word is a contraction of the New England Algonkin "wampumpeak or wampompeage." "Wamp" means "being white", "umpe or ompe" means a string (of shell beads), and "ak or ag" is the sign of the plural. Thus the significance of the whole word is "strings of white shell beads." "Peak" was also used by the early whites.

This is the common name given to the shell beads of the American Indians. It now generally refers to the purple and white cylindrical beads of the Algonkin and Iroquoian Indians of the northeastern United States, especially the latter, who carried the use of these beads to its greatest development.

HISTORY. Beads of whole or partially broken shells seem to have been extensively made by all the Indians of the eastern seaboard, as considerable quantities have been found in excavated burials and village sites. But the greatest authorities are pretty much in agreement that the cylindrical shell bead of rather small size was not made before the advent of the whites at the beginning of the 17th century. In 1609 the Dutch settled at Manhattan. The penurious home government refused to send the colony small silver coins. As something was necessary it was decided that cylindrical shell beads should be used. The nearby Indians learned the art of making the beads and steel awls for drilling were in great demand among them. In 1628 the New England English adopted the practice, but not till 1630 did the Indians around them accept the beads as money. There was much trouble with counterfeiting in stone and glass and in very badly worked shell. Owing to counterfeiting and value fluctuations, dozens of laws were passed relative to wampum. In 1746 John Campbell of New Jersey set up a wampum factory which was carried on by his descendants until quite recent times. The Campbell and other late wampum can easily be distinguished by the length of the beads. This late wampum was principally made for the Indians of the west, who adopted its use long after the Eastern tribes.

ABUNDANCE. It is difficult to conceive the vast quantities of wampum which were made and used in the 17th and 18th centuries. 1844 figures indicate that one person's yearly output was about 100,000 beads, and that as many as 100 people were making beads at the time. The total amount made must have run into the millions in number and the tons in weight. What became of all this enormous supply is a question which puzzles investigators, as the amount now in existence is rather small.

It is known that much wampum was buried in Indian graves and destroyed by fire as in the Iroquoise White Dog Ceremony.

SHELLS USED. The chief source of the purple and white wampum was the common round or hard-shell clam *Venus mercenaria*, commonly called quahog or hen. The conch, the periwinkle, (*Pyrula carica* and *Pyrula carnaliculata*), the whelk, (*Buccinum undatum*) and fresh-water shells of the genus *Unio* were other sources of raw material.

PROCESS OF MANUFACTURE

There are no exact account of the methods used by the Indians in making wampum. The following description is of the method used by the whites.

ROUGH SHAPING. The shells were broken with a hammer and chisel into bits averaging 1 inch in length and half an inch in diameter, the thin edge being first chipped off. The lip of the clam provided the purple, which shaded from pale violet to deep purple, while the white came from the inner part of the clam or from other varieties, especially those having a central column. In parts of the clam shell the purple and white alternate in bands, which accounts for the numerous streaked beads.

FIRST GRINDING. These rough bits were set in a notch sawed in a

stick. This notch was opened and closed by bending the ends of the stick up and down. The shell so placed in this crude vise was held against a grindstone and shaped into an octagonal figure. The bits were then set endways in the vise so that ends could be ground square.

DRILLING VISE. A rough bead was set in a second notched stick, one end of which was securely fastened to the bench so as to stick out horizontally. From the other end a weight was suspended by a wire, the pull of the weight being sufficient to hold the bead tight in the notch.

BOW DRILL. One end of a steel saw file was drawn out to a point about an inch long with a flat chisel point, while the other was fitted into a wooden or steel breastplate. A large spool was slipped over the drill and tightly wedged. To rotate the shaft a bow was used, the string being wrapped several times around the spool.

DRILLING. After the bead was securely gripped in the vise, the point of the drill was set against it, the breastplate braced against the chest of the operator and the bow moved alternately right and left. The drill was frequently withdrawn in order to remove the particles of ground shell. Water was constantly applied to keep the drill and shell cool. In most cases the beads were drilled from both ends, but expert operators often went through from one end.

FINISHING. When a number of rough beads had been pierced they were strung on a wire, one end of which was fastened to the bench. Beneath this wire and parallel to it was a grooved grindstone moved by a foot treadle. The strung beads were held on this stone with one hand and turned on the wire with the other. In a short time they were reduced to a uniform size, well rounded and polished. The finished beads were assembled on strings about a foot long, 15 to 20 beads to the string. A good worker could make 5 to 10 strings a day and sell them for 12 to 15 cents for the purples and half that for the white. Finished beads were from 1-8 to 3-16 inches in diameter and 1-8 to 7-16 in length.

PRIMITIVE METHODS. It is suggested that if cylindrical beads were made by the prehistoric Indians something like the following processes were used. The shells were roughly shaped with stone tools. Drilling was done in two ways. A tiny stone drill was fastened to a slim shaft. The rough bead was held in one hand against the point of the drill, which was rotated by rolling it with the other hand on the worker's thigh. Or else the drill was rotated between the palms of one worker while another held the bead. Finishing was done by rubbing with sand.

USES OF WAMPUM

MONEY. As outlined under "History", the Dutch and English used shell beads as a medium of exchange. The laws of both colonies make much mention of the value wampum was to have. It was handled loose, by foot-long strings and by units called fathoms, the word in this connection not being a measure of length but a count. 360 white and 180 purple beads made a fathom. Purple beads were twice as valuable as white. Purple beads averaged about 5 to the penny and were legal tender up to forty or fifty shillings.

Wampum was used in enormous quantities to pay tribute demanded from the Indians by the whites. 500,000 beads were sometimes demanded and paid. Reference 1, page 35, gives many examples of this practise.

ORNAMENT. Investigators have formed the opinion that personal decoration was the first purpose of wampum. The accounts of the early explorers are full of mention of this use of shell objects. While large shells and pendants and disk-shaped beads were most used for this purpose, there is ample evidence that the small cylindrical beads were also

used. Collars, necklaces, headbands, armlets of several sizes and decorations sewn on clothing were all made from wampum.

BELTS for ceremonial use made of cylindrical beads are the most famous objects made of wampum. They attained their highest development among the Iroquois, though all the eastern Algonkin tribes made use of them. In the League of the Iroquois every official act was accompanied by the use of these belts. Many belts were only made for temporary use, after which they were dismantled. The beads were put back into storage. Only very important belts were preserved. Belts also served as memory-aiding records of ceremonial formulas and practises. Combinations of the purple and white of the shell and red paint smeared on the beads were the means of expressing many ideas by a sort of picture writing. White was significant of peace, good health, prosperity and other good things, while purple was the sign of sorrow, death, mourning, hostility and similar conceptions. Red was connected with war. Belts served as the official credentials of embassies and as summons to war. Treaty-making was always accompanied by the making and exchanging of belts. Belts were part of mourning ceremonies. The giving of belts as atonements for murder was a common practise. Those belts which formed the official records of the Iroquoise League were in charge of an hereditary keeper. Some years ago those which remained intact were placed in the New York State Museum at Albany.

The ceremonial use of belts is a subject of too great complication to be more than mentioned in this paper. At some future time the matter will be more extensively discussed.

BELT-MAKING. The beads were woven by the women on long parallel strands of vegetable fibre, leather or string. Both ends of the strands were put through holes in pieces of skin to keep them evenly spaced. They were then fastened to the ends of a bow to keep them taut. The beads were worked in and out of the strands with a needle, the length of the beads being at right angles to the strands. The completed belts usually had end fringes. The belts ranged in size from 1 to 5 or 6 feet long and from 2 to 15 inches wide. The latter width is very exceptional, 4 to 6 inches being the average width. Between 1 and 2 thousand beads made up an average belt. There are references to belts of 7,000 beads.

STRINGS of wampum, a foot or so long and usually tied at one end into small bunches or sheaves, were used like the belts but in connection with matters of lesser importance. Meanings were given the strings by many different arrangements of color. Among the northeastern Algonkin strings of wampum are an important part of the marriage proposal ceremony.

Compiled from the following sources by Jean Allard Jeançon and F. H. Douglas:

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1. Wampum and Shell Articles of the New York Indians—Beauchamp. Bulletin 41, 1901.

MUSEUM OF THE AMERICAN INDIAN, HEYE FOUNDATION, NEW YORK

2. Beads and Beadwork of the American Indians—Orchard. Contributions, Volume 11. 1929.

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BUREAU OF AMERICAN ETHNOLOGY, WASHINGTON

4. Article on Wampum—J. N. B. Hewitt. Bulletin 30, Vol. 2, page 904.

AMERICAN ANTHROPOLOGICAL ASSOCIATION

5. The Functions of Wampum among the Eastern Algonkin—Speck. Memoirs, vol. 6, no. 1. 1919.
6. Personal conversations with Arthur Woodward, of the Los Angeles Museum.

Pictures of wampum, 1, 2, 5; Colored plates, 3; Pictures of bead manufacture, 2; Description and picture of belt-making, 2.

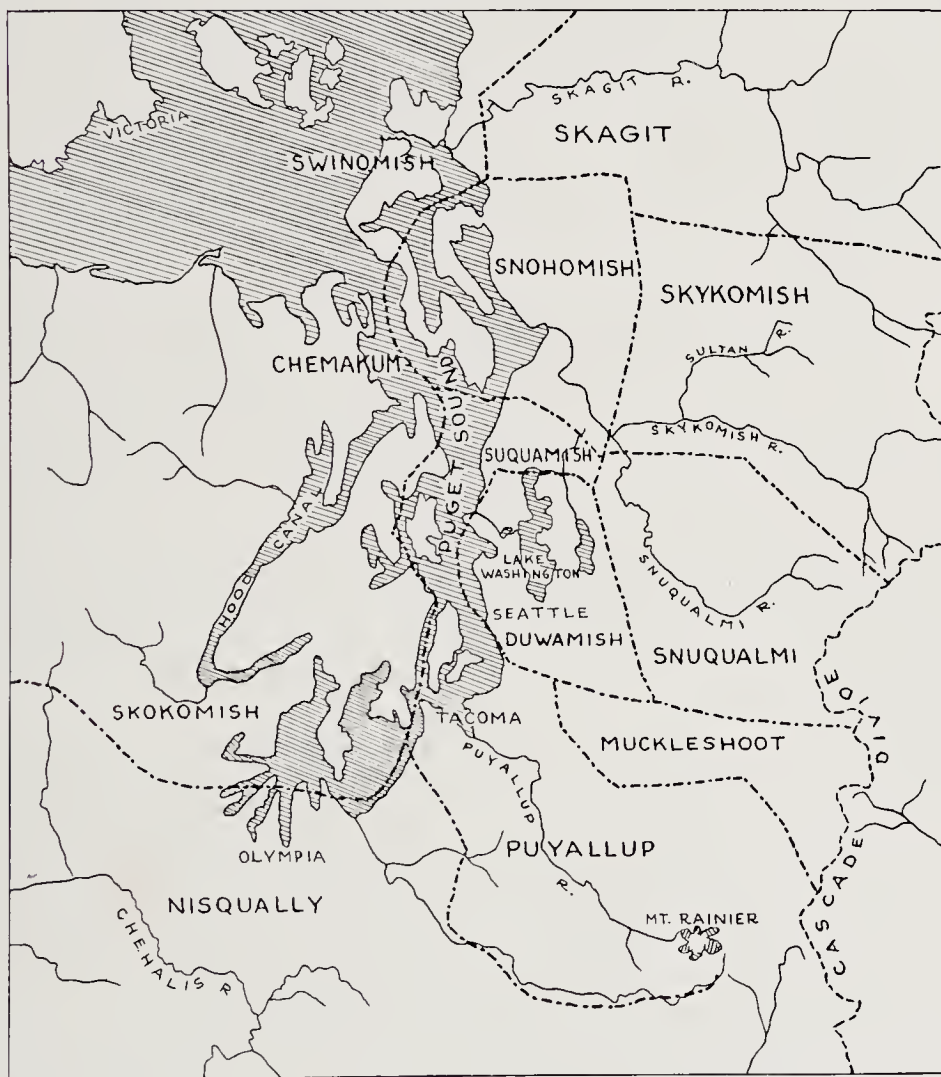
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UNIVERSITY OF WASHINGTON

Leaflet No. 32 - September, 1931

THE PUGET SOUND INDIANS

NAMES, LOCATIONS AND
CULTURE

LINGUISTIC STOCKS. The Chemakum belong to the Chimakuan stock. All the other tribes mentioned are members of the Salishan stock.

CHEMAKUM. The 1910 census lists 3 members of this tribe, only 1 being full blood.

DUWAMISH or DWAMISH. Tulalip reservation. 20 members in 1910.

MUCKLESHOOT. Muckleshoot reservation. 1930 census lists 208 members.

NISQUALLI. Nisqualli reservation. 56 members in 1930.

PUYALLUP. Puyallup reservation. 296 members in 1930.

SKAGIT. Swinomish reservation. 200 members in 1930.

SKYKOMISH or SKIHWAMISH. Information as to the present location and numbers of this tribe cannot be found.

SKOKOMISH. Skokomish reservation. 170 members in 1930.

SNOHOMISH. Tulalip reservation. 555 members in 1930.

SNOQUALMI. Tulalip reservation. 11 members in 1930.

SUQUAMISH. Port Madison reservation. 175 members in 1930.

SWINOMISH. Tulalip reservation. 260 members in 1930.

POPULATION CHANGES. Exact information as to the numbers of these tribes is very difficult to obtain. About 2500 are listed as living on the reservations, but there are a good many others scattered throughout the area. Three thousand is perhaps a reasonable estimate for the total number. Mooney estimated that in 1780 there were about 6000, and perhaps 2,000 in 1907. The United States Census of 1910 lists about 2,200.

CAUSES OF DECLINE. Diseases introduced by the whites are the principal cause of the reduction of these tribes. Smallpox in 1782-83, sexual diseases after 1788, fever in 1823, measles in 1847, smallpox in 1846 and 1852-53, all contributed greatly towards reducing the population. Liquor, and wars with the whites in the period 1840-55 were other potent destroyers.

HISTORY. While some of the early Spanish explorers may have reached the Puget Sound tribes, it is doubtful if they were affected by the whites before about 1790. Lewis and Clark in 1804-06 wrote the first descriptions of these people. Until 1846, when the Oregon question was decided and the gold rushes began, the Indians were only in contact with a relatively few traders and travelers. The onrush of whites after this date brought on a period of fighting which lasted about fifteen years. After this came the making of treaties and the setting aside of reservations, on which the Indians have lived ever since.

HABITAT. The home of these Indians is a heavily wooded, well watered, mountainous area through which run many rivers, and into which deep fiords penetrate from Puget Sound. Much game and fish were found in the forests and rivers and in the Sound.

CULTURE. All of these tribes had more or less the same material culture, social organization and religious systems. But there were many tribal variations in all the phases of their life as noted in the following paragraphs. For information about each tribe reference 1 should be consulted.

DWELLINGS. In winter permanent villages along the water were occupied, while in summer the people wandered through their territory seeking food and living in temporary shelters. The winter houses were

large community buildings, often over 100 feet long, with walls and roof of wide cedar planks supported by log columns. Sleeping benches lined the walls, and partitions often divided the space for the different families. In summer conical or square pole frames were covered with mats.

CLOTHING. In summer the men wore only the breech cloth and the women a short skirt. Bark or wool blankets gave extra warmth. In winter shirts, capes, skirts and leggings of tanned skin were worn. Hats of basketry or fur were used to some extent. Both sexes wore skin moccasins. Painting and tattooing were used. Ear and nose rings and shell necklaces and bracelets were worn.

FOOD. Fish, meat, berries and roots provided food. Fish, chiefly salmon, were caught during the summer with nets, traps, hook and line and spears and eaten fresh or dried and smoked for winter use. Much shell fish was eaten. The meat of most animals and birds was eaten when killed or after drying. Traps, bow and arrow, spears and clubs were used in hunting. Deer and elk meat were the favorites. Berries of many kinds were gathered in great quantities and made into cakes for winter use after mashing and drying. Acorns were a useful food, as were hazelnuts. Of the roots and bulbs that of the camas was the most important. Others used were cattail, arrowhead, brake and wood ferns and tiger lily.

Fire was made by friction produced with a hand drill, shredded cedar bark being the tinder. Food was cooked by boiling with hot stones in baskets, steaming in a pit and roasting. Two meals were served, at about nine in the morning and six at night.

WEAVING. Heavy blankets of mountain goat wool, dog hair, or feathers and fireweed were woven on a loom having two upright side pieces connected with rollers at top and bottom. The fabrics were woven in one piece around these rollers and opened up when finished.

BASKETRY. Coiled baskets were made of dried cedar roots, trimmed with imbrication in black, white, red and brown made from horsetail, bear grass, cedar root and wild cherry. Soft twined baskets were made of the same materials. Many mats were made from shredded cedar bark or from cattails.

WOODWORK. In addition to canoes (see below) boxes, buckets, dishes and spoons were made of wood. Totem poles were not used, though house poles were often crudely carved and painted. Huge trees were felled with antler or wood wedges after chipping with stone axes.

CANOES were made in many sizes from whole logs. There were five types, holding from one or two to sixty people. They were propelled by paddles and sails.

TOOLS. Before the coming of the whites all work was done with stone and antler tools. In later years iron was of course used.

SKINWORK. The hides of many animals were dressed in about the way described in Leaflet 2. Only deer skin was dressed on both sides. Clothing was the principal kind of thing made from skin, though the Nisqualli made parfleches.

INTERTRIBAL WAR AND TRADE, especially the latter, were common. The tribes on the coast and those nearer the Cascade mountains exchanged foods and there was much trading of baskets, boats, blankets and many other articles, since all the tribes did not make all the things they needed. Whole tribes moved to fight under a war chief or small independent parties went on raids. Bows and arrows, clubs and spears were the weapons used.

MONEY was in the form of shells. There were two forms; single strings of white disks of clam shell, and double strings of tubular beads with a round bead between each pair. Single very large clam shells from the north also served as currency. Dentalium shells, so common farther south, were not used.

GAMES were mostly those involving the guessing of the location of some hidden article. Shinney, footracing, wrestling and other field sports were common. Gambling was very common and heavy.

RELIGION. There seems to have been no belief in a god or gods. There was a strong belief in spirits. These beings were believed to travel around the world anti-clockwise, taking a year for the trip. Youths at puberty were sent out to catch one by means of fasting, continence, dreams and the like. Once a spirit was obtained it belonged to its owner for life, though it continued its travels. Once a year it came back to him. Possession of a spirit gave the owner unusual power to do various things, such as being a very expert fisherman. The higher the social position of the owner the more powerful was the spirit. The giving of feasts and the performing of songs and ceremonies were the duties of spirit owners.

Medicine men or shamans carried on their occupation through the aid of powerful spirits. Their principal duty seems to have been to heal the sick. Shamans did not usually practise until they had acquired a number of spirits.

There was a firm belief in the after life of the soul and in ghosts.

SPIRIT CANOE CEREMONY. This is the great religious ceremony of these tribes. It consists of the pantomimic acting out by the shamans of their journey into Ghostland to bring back the soul of a living person stolen by the ghosts. It is held in the winter and lasts several days.

TRIBAL ORGANIZATION. Society was divided into two classes, slave and free. The slaves were usually war captives from other tribes. The free class had two groups, the chiefs and their families, and the middle class group. The classes rarely intermarried.

The tribes were governed by head chiefs, either elected or hereditary. There were sometimes sub-chiefs. Decisions on tribal policy were decided at general councils. The will of the majority ruled.

CUSTOMS. Children were born in special isolated lodges and kept through infancy on cradle boards. Marriage was supposed to be out of the tribe, especially for the ruling class. Marriages were arranged by contract between two families and accompanied by gift exchanging and visiting. The pair lived with the man's father. The dead were carefully dressed and wrapped in skins. According to individual tribal practise the body was put in a canoe set on a platform or in a tree, in a box on a raised platform, or buried in the ground. Sometimes the bones were reburied. Often much property was put with the body. There were a good many different mourning customs.

The potlatch gift-giving feast was held by all the tribes. It was not as highly formalized as among the northwest coast tribes. Potlaches were held in large houses specially built for them. Big potlatches were held on the following occasions; the giving of a new name; when the salmon began to run; at death; at the reburial and after a good hunt. This last type was usually a small affair. At the big potlatches whole tribes came to visit and to give and receive presents, with the host always outdoing his guests. Such feats have been forbidden by law for many years because of the poverty they brought about. The sweat lodge was used medicinally.

PRESENT CONDITION. Very little of the life and practises mentioned in this paper now exist. To a very large extent these Indians live like their white neighbors. Fishing, berry picking, lumbering, and basket making take up most of their time. Christianity is quite widespread.

Compiled from the following sources by F. H. Douglas:

UNIVERSITY OF WASHINGTON, SEATTLE

1. The Indians of Puget Sound—Haeberlin and Gunther. Publications in Anthropology vol. 4, no. 1. 1930.

AMERICAN ANTHROPOLOGICAL ASSOCIATION

2. Tribes of the Columbia Valley and of the Coast of Washington and Oregon—Lewis. Memoirs vol. 1, part 2. 1906.

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3. Handbook of American Indians. Bulletin 30.
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7. Paraphernalia of the Duwamish "Spirit Canoe" Ceremony—Waterman. Indian Notes Vol. 7, nos. 2, 3 and 4.

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8. Indian Population of the United States and Alaska, 1910.

BUREAU OF INDIAN AFFAIRS, DEPT. OF THE INTERIOR

9. Annual Report of the Commissioner for 1930.

Population, 8, 9: details for all tribes, 1 to 3; details and pictures of basketry, 4; details and pictures of canoes, 5; details and pictures of houses, 6; information on religion, 1, 7.

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HAVASUPAI VILLAGE IN CATARACT CANYON

American Museum of Natural History

Leaflet No. 33 - October, 1931

THE HAVASUPAI INDIANS

LOCATION AND POPULATION. The Havasupai Indians are a sedentary, agricultural people belonging to the Yuman linguistic stock, living in an area measuring about 75 by 90 miles centering around Cataract Cañon, a gorge entering the Grand Cañon of the Colorado River from the south, about 30 miles west of the railroad terminal and settlement on the south rim. Summers are spent in the canyon and winters on the plateau draining into the gorge. The 1930 Indian Bureau census shows 198 members, which indicates a slight increase since 1905. The tribe has probably never numbered more than about 275.

NAME. Havasupai is an abbreviation of their own name for themselves, "Havasupai", meaning "blue-green water people". They are also called Havasu, Supai, and Coconino.

PHYSIQUE. The people are of stocky build and medium height and are generally longheaded. Their light complexions are noticeable.

HISTORY. The Havasupai are very probably a branch of the Walapai, a Yuman people living immediately west of them. Indications are that they have lived in their present area for a long period. Padre Garces discovered them in 1776. After the middle of the 19th century a few American parties visited them, but until quite recent times they remained nearly untouched by white civilization. Their present reservation was established in 1882. Because of its isolation, the tribe has kept a large part of its aboriginal culture.

DWELLINGS. The summer homes in the canyon have a conical foundation of four logs locked together at the tops. Smaller poles fill in the gaps. Flexible rods are tied horizontally to these poles, an opening to the height of a man being left in one side. On these rods are tied rows of thatching. Willow brush is the most common thatch. A smoke hole is left in the roof. The sides and sometimes the top are finally covered with earth. Some houses have an entry way like that seen on Navahos hogans—see leaflet 9. An average house, occupied by one family, is 12 feet square and 9 high. Variations are earth covered gabled structures and those having walls made of horizontally laid logs. There is a central fireplace, and beds of cedar bark or rabbit skin lie against the walls. Property is tucked away in any available corner or hung from the roof. The door is closed with a loosely hanging blanket.

The winter camps sometimes have similar houses, but usually the winter house is a rectangular affair with a flat dirt roof and thatched sides. These houses are set in dense cedar or pinyon thickets, facing south.

Both summer and winter colonies have shade structures in many different forms.

CLOTHING was all made from animal skins until quite recent times, when garments of white manufacture have come into use. Work in skins, including the making of women's clothes, is done by the men. The men wear shirts, breechcloths, leggings and moccasins. The shirts and leggings were once like those worn on the plains—see leaflet 24—but nothing is seen now that does not show white influence in cut and sewing. The women's dress has two parts, an apron hung from the neck and reaching from chest to ankles in front, and a shorter piece hanging from the waist behind. A short apron reaching from waist to knees in front is sometimes worn under the dress. The two parts of the dress overlap and are held in place by tie strings and a Hopi woven belt.

Fringes are long and on the women's clothes are trimmed with metal or hoof jinglers. The men always wear a hard sole ankle high moccasin. The women's moccasin is also hard soled, but has a high upper wrapped around the calf. Women sometimes go barefooted. Both sexes, but especially the women, use rabbit skin blankets for warmth. The women also wear an ornamental shawl made of several bandannas sewn together.

Face painting and tattooing are done to some extent. Necklaces and ear rings of Pueblo and Navaho shell and silver are worn.

FOOD. The Havasupai are very successful farmers, being famous for their crops. The fields are all located in Cataract canyon except for the Indian Garden just under the El Tovar Hotel. There is considerable irrigation. Corn is the principal crop. Beans, squash, melons, sunflowers and tobacco are also raised. Mescal is roasted as by the Apache, see leaflet 16. Cactus and yucca fruits, peaches and figs, mesquite pods, juniper berries, pinyon nuts, and the seeds and leaves of several plants are all eaten. Honey is eaten when found. Salt is obtained from the Grand Canyon.

Meat, obtained by hunting with bow and arrow, is an important part of the diet. Deer, antelope, mountain sheep, wildcat, mountain lion, raccoon, rabbit and squirrel are all hunted. Rabbits are killed in drives by the men and boys. Small rodents are caught with traps. Turkey, quail and doves are eaten. Fish, lizards, etc., are not eaten. Dogs are used in hunting, but are not eaten.

Corn is ground on metates and in mortars and cooked in a great variety of ways. Roasting and boiling are the common methods of cooking. Meat is dried. Boiling in baskets has long been abandoned. Some native clay pots are still used in cooking, though metal utensils are more common. Most cooking and eating are out of doors. Three meals are eaten.

BASKETRY is made by the women in two technics, twining and coiling. Conical burden baskets, globular water bottles and shallow trays or bowls are made by twining. Twigs of the acacia (*Acacia greggii* Gray) are preferred for this work, though cottonwood and willow are also used. The burden baskets and water bottles are decorated with simple designs made by introducing different varieties of twining and with black from the martynia or devil's claw. They have loops for carrying. The water bottles are first coated with soapweed paste colored red and then with pinyon gum.

Most of the coiled baskets are shallow trays or bowls. The materials used are the twigs of cottonwood or of a plant for which there seems to be no English name. The sewing is on a three rod foundation. Simple geometrical and banded designs are made with martynia black. The designs have no meaning, though to oblige tourists names are often given to them. Basketry is still made in quite considerable quantities.

POTTERY is still made to a limited extent by the women. Brown, globular pots of coarse texture, unslipped and undecorated, and smoking pipes are the only articles made now. The pots are built up by a combination of the coil and paddle and anvil methods and after drying in the sun are baked, one at a time, in hot coals for about 24 hours.

TRIBAL ORGANIZATION. The family in our sense is the tribal unit. These small groups are loosely bound into larger ones by blood ties. There are no clans or gentes. There are six chiefs of equal power, though one usually acts as a discussion leader and spokesman. Chief-

tainship is theoretically inherited, but prestige has to do with the selection. The chiefs have little power, their principal duty being to give advice and to lead discussions. The tribal council decides all questions of importance. There was no war chief, the most competent available leader taking charge of the rare defensive fighting of the tribe.

RELIGION is very slightly developed among the Havasupai. Prayers are addressed to the sun, earth, rocks, trees, water, etc. Prayer sticks are used. There is belief in the soul's future life and in ghosts. There are shamans or medicine men who by means of their possession of familiar spirits, dreams and knowledge of various magical practices, cure disease and fractures, snake bites, etc., and regulate the weather.

DANCES. There are now only two dances, and were only three in the past. The largest affair is a general tribal reunion and dance held annually in the early fall. To some extent it is a prayer for rain, etc., but the social side predominates. Both men and women in ordinary clothes dance in a circle to the sound of voice and drum. There used to be special costumes. At intervals there are addresses by the chiefs and visiting Indians. The Mohave mourning dance is sometimes practiced, but not in its complete form. Both sexes take part and all sing. This ceremony is also accompanied by speeches, games and intertribal visiting. Until 20 years ago there was a dance of masked and painted men. They danced in formations like those of the Virginia reel while singing. The dance was to obtain good fortune and prosperity.

DIVERSIONS. Spare time is occupied in gossiping, bathing in the sweat lodges and playing games. Dice games are favorites. Foot and horse-racing, shinney, wrestling, hoop-and-pole, cup-and-pin and playing with dolls are the common amusements. Gambling is common.

CUSTOMS. Children are born in the homes and are placed on basketry cradle boards. There are various small customs for the event, but they are hardly ceremonies. Names are of little importance and are told to strangers without hesitation, which is unusual among Indian tribes. Marriages are now monogamous, though polygamy once existed. The only restriction is that blood relations may not marry. The young people arrange their own marriages and parental consent is sought. Gifts are interchanged. The couple first live with the wife's parents. The dead are well dressed and the whole tribe meets to mourn and to listen to talks by the chiefs. The bodies were cremated until about 1895. Now they are buried in the walls of the canyon. Personal possessions are burned and horses killed on the grave. Graves are avoided. The people are peaceful, industrious, intelligent and hospitable. They are great traders.

Compiled from the following sources by F. H. Douglas:

AMERICAN MUSEUM OF NATURAL HISTORY, NEW YORK

1. Havasupai Ethnography—Spier. *Anthropological Papers*, Vol. 29, Pt. 3, 1928. UNITED STATES NATIONAL MUSEUM, WASHINGTON

2. Some Observations on the Havasupai Indians—Shufeldt. *Proceedings*, Vol. 14, 1891.

ATLANTIC MONTHLY MAGAZINE

3. The Nation of the Willows—Cushing. Vol. 50, pages 362-74, 541-59, 1882.

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4. Article on the Havasupai—Henshaw. *Bulletin* 30, Vol. 1, p. 537.

Pictures, 1, 2; details on all points, 1; extensive bibliography, 1.

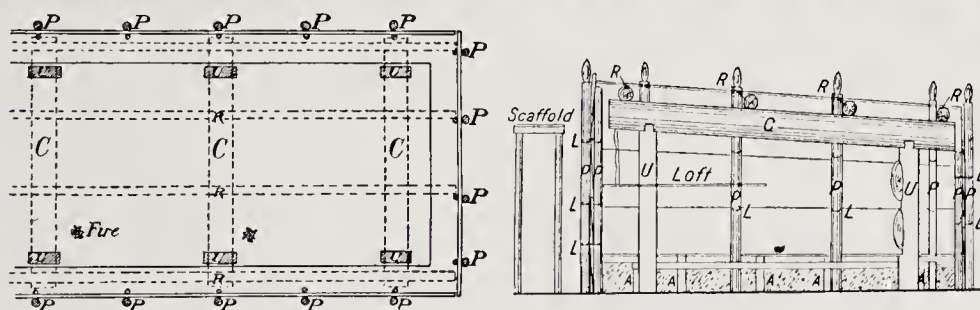
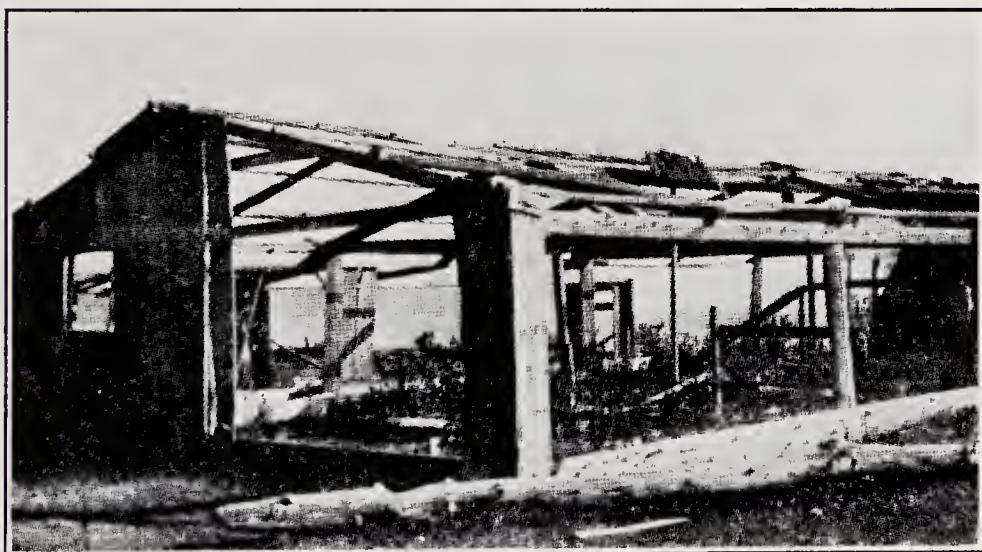
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(a) Diagram showing the construction of a "shed" house. (b) Section of house. After Boas. (c, cross-beams; u, uprights; r, rafters; p, poles; l, ropes of cedar-branches which pass through holes in the boards and are tied around the poles).

Leaflet No. 34 - October, 1931

PUGET SOUND INDIAN HOUSES

THE PUGET SOUND INDIANS are the members of the following tribes living on or near Puget Sound; Klallam, Chemakum, Skokomish, Satsop, Nisqually, Puyallup, Muckleshoot, Duwamish, Snoqualmi, Suquamish, Skykomish, Snohomish, Skagit, Swinomish and Samish. For additional information about these tribes see leaflet 32.

TIMBER. The building of the great houses described in this leaflet was only possible because of the existence in the region of great quantities of immense trees, mostly cedar and spruce. The wood of these trees is very straight and splits easily and evenly, so that the Indians were able to make wide planking with their stone, antler and later iron tools. The trees were felled by driving big antler or wood wedges into the trees, which had previously been notched.

PRESENT CONDITIONS. The last remaining native house in the Puget Sound area was destroyed near Seattle many years ago. A few roof planks are preserved in the Museum of the American Indian. The modern Indians live in small houses like those of the whites.

HOUSE TYPES

SHED ROOF. This was the most common type of house not only in the Puget Sound region but also in the whole area washed by Juan de Fuca Strait and adjoining waters. The distinguishing characteristic of these houses was their nearly flat roof sloping down from the front of the house to the rear in one pitch. These houses were built in dimensions which would seem unbelievable except for the recorded measurements of some of them. Buildings 500 to 700 feet long and from 40 to 90 feet wide are described in the literature on the subject. Such very large examples were community houses, the space within them being allotted to many different family groups. The average house was probably not over 75 feet long by 20 wide. They were built with the long sides parallel with the waterfront.

GABLE ROOF. The houses of this style are found around Puget Sound extending southwards, and stretching north from the east side of Vancouver Island. They have a two pitch roof sloping very gently in opposite directions from a central ridge pole. They are much smaller than the shed type. They are built at right angles to the shore line. Beyond the certain fact that such houses were built in the Puget Sound region but little information is available about them. They were certainly less common than the shed type and were said to be used by rich men only. Considerable is known about the type elsewhere, however, so that a reconstruction is possible.

GAMBREL, HIP, OR LEAN-TO ROOF. Houses built in this style were peculiar to the region. Information as to the reason of this development is not available. These buildings were nearer square in shape than the other types. From the top of the wall line, on one or more sides, a rather short, steep roof sloped up to a center section which was almost flat, sloping only a very little. These houses varied greatly in size.

POTLATCH HOUSES. Every village had at least one or two buildings which were reserved for the great gift-giving ceremonies known as

potlatches. There was no special model for these houses, but they were usually large.

TEMPORARY DISMANTLING. It was the custom of these tribes to temporarily dismantle the large houses in the seasons when they were not in use to the extent of removing the great planks from the walls and roof. In the community houses the planks covering the section assigned to each man belonged to him. In the summer season, when the people were wandering about on food gathering expeditions, the planks were very useful in making temporary shelters, or platforms across two canoes for the transportation of large quantities of material of various kinds. The making of these planks was an extremely difficult and arduous proceeding and a few of them were worth a fortune to an Indian.

HOUSE CONSTRUCTION

FRAMEWORK. Two rows of upright planks, 2 to 3 feet wide and 6 to 8 inches thick, were set in the ground 25 to 50 feet apart, according to the width of the house. The uprights were 12 to 14 feet from each other and the rear ones were the shorter. One family group lived in the space between each pair of posts, which were often carved with the spirit helper of the owner. (See eighth heading, leaflet 32.) Great beams were then lifted into place, on top of the uprights and connecting pairs of them. In the gabled houses there were center uprights and a ridge pole on which the beams rested. These beams were often over 50 feet long and two feet in diameter. Three or more rows of smaller logs were next placed lengthwise of the house, at right angles to the main beams.

ROOF PLANKS about three feet wide were laid in a double layer on the rows of small logs. Troughs were cut in the planks, the lower layer having deep gouges facing upward and the upper layer having shallow troughs facing downward. The planks were laid much like modern tile. The planks were bound to the beams with cedar withes. Cracks, knot-holes and other defects were carefully filled with clay, pitch, or clam-shell patches.

WALL PLANKS ran both vertically and horizontally. In the former case the planks were stood as closely together as possible. Battens were placed over the cracks and all were held in place by long strips running horizontally and lashed to the inside. Wedges held loose planks in place. Where the planks were used horizontally a row of extra poles was set up around the outside of the house. The planks were suspended in overlapping rows by slings fastened to the house posts and the outer poles.

DOORS. It is suggested that before the introduction of iron tools there were no true doors, the Indians entering the building through spaces left between the planks, mats being hung to close the openings. But most of the houses described had openings framed with heavy posts and lintels. Others were entered through holes cut in the planks. Later houses had heavy plank doors swung on iron hinges. The big houses had several doors. Back doors were provided to allow a quick escape into the forest if the building was attacked.

INTERIOR ARRANGEMENTS. A prominent feature of many of the houses was the central pit or trench, from 1 to 5 feet deep and entered by steps or a ramp. Houses for more than one family had a number of fires placed along the sides of the building, the center being left open for a passageway. Two to four families used one fire. Smoke escaped through holes in the roof made by pushing aside some of the planks with long poles. Bark was the principal fuel. The houses were sometimes divided into rooms by partitions running the full width of the building. Bed platforms, 1 to 2 feet high and 3 to 4 feet wide, ran around the walls of each family section. In front of these were low platforms for seats and beds for the slaves. Above the beds were storage shelves, sometimes reached by ladders. Every house had a central rack built to the height of the walls on which fish were dried. Cattail mats lined the walls, lay on the floor, served as bedding and were hung up as partitions. The houses were very smoky and always smelled very strongly of fish. Because of their loose construction they were rather drafty. Houses passed from father to son and were burned or given away if the owner died in them.

SUMMER HOUSES. In the summer the people left the permanent villages of plank houses and wandered far afield in search of food. While on these expeditions they lived in small temporary houses, one family to a house, though sometimes communal houses were made. There were two main types of summer houses, the difference being in the shape of the pole framework. Some tribes had a conical framework like a tipi while others favored a square structure with a gable roof. Both types were covered with overlapping layers of reed matting.

Compiled from the following sources by F. H. Douglas:

MUSEUM OF THE AMERICAN INDIAN, HEYE FOUNDATION, NEW YORK.

1. Indian Houses of Puget Sound—Waterman and Greiner. Indian Notes and Monographs, Misc. No. 9, 1921.

UNIVERSITY OF WASHINGTON, SEATTLE.

2. The Indians of Puget Sound—Haeberlin and Gunther. Publications in Anthropology. Vol 4, No. 1, 1930.
3. Klallam Ethnography—Gunther. Publications in Anthropology. Vol. 1, No. 5, 1927.

Pictures of houses, 1; information on tribal variations, 1, 2, 3.

DENVER ART MUSEUM

100 W. 14th Ave. Parkway, Denver, Colorado 80204

Department of Indian Art

NORMAN FEDER, *Curator*



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SANTA CLARA AND SAN JUAN POTTERY

LOCATION. Santa Clara and San Juan are Pueblos, or permanent villages, of the Tewa Tribe of Pueblo Indians. These towns are about 35 miles north of Santa Fe, New Mexico, in the Rio Grande valley. The population of each town is about 175.

PREHISTORIC PERIOD. Black or red polished pottery has been found in Chaco Canon and surrounding ruins and in many places in New Mexico and Arizona. It is supposed to belong to the last Basket-maker and first two Pueblo periods—see Leaflet 11—and resembles in every way the polished pottery now made on the Rio Grande. So far there has been no attempt to trace the modern ware back to the prehistoric, and as the ruins in the neighborhood of the modern villages do not contain any of this kind of pottery its true origin is not known.

HISTORIC PERIOD. As far back as is known within historic times the Tewa and perhaps other Indians of the Rio Grande country have made the polished black or red wares. This was, and is, especially the case at the villages of San Juan and Santa Clara. San Ildefonso made some of the ware but also made a polychrome pottery. Similar ware of poor quality was made at Nambe, Picuris and Pojuaque. Santa Clara is especially noted for the black, and San Juan for the fine red wares, although both villages make the two kinds, neither of which show any decoration.

At the time of the coming of the Spaniards there were at least nine Tewa villages scattered in the neighborhood of the present ones in the Rio Grande valley. Now there are only four, San Juan, Santa Clara, San Ildefonso and Tesque. Nambe has become so Mexicanized that there are no full blooded Tewas now living there.

GATHERING OF MATERIALS. There are many clay beds in the neighborhood of most of the villages and the gathering of the clay is often made the excuse for a sort of picnic in which families and their friends participate. Fine grained sand is gathered from the banks of the Rio Grande and Chama rivers, as well as from the stream beds of the larger creeks close to the villages. Yellow ochre, used in making the red slip, is found in natural deposits in many places about the country.

CLAY. The clay is a dirty gray in color, and comes in slabs and chunks of all sizes. It is first mashed, and then ground and pounded into almost dust, on slabs of stone reserved for this purpose and often consisting of old fragments of discarded metates. Small stones and other foreign materials are carefully picked out by hand and thrown away. The powdered mass is thoroughly sifted and set aside. The very fine, white sand, rich in silicate grains, is freed from foreign matter by washing in a basket. After cleansing it is thrown onto cloths to dry. When dry it is sifted until each grain is separated from the others and then stored until needed.

CLAY MIXING. The potter mixes two parts of clay to one part of sand, in a dry state, on a cloth with her hands. This is to insure the materials being thoroughly and properly mixed. Then water is flipped over the mass until it becomes fairly moist. It is then kneaded, patted, and rolled. Finally, if not moist enough, it is again spread out on the cloth and more water added. When the mixing is finished the paste is rolled into a ball and wrapped in a damp piece of common canvas. Some of the older women formerly used ground up pottery fragments for temper, in addition to the sand which is used for the same purpose, but this is seldom done anymore. The mixing is a delicate operation, for should there be too much clay the vessel will crack in baking or be too porous. Too much sand will make it crack and crumble after baking.

Also the paste must have neither too much nor too little moisture. If too wet it will collapse during the drying, while if not wet enough it will be crumbly and not stand up.

MOLDING. The women do not and never have used a potter's wheel. The nearest thing to this is a saucer or piece of flat board on which the article being made is often placed for support, and which may be turned around during the building process. Usually the potter takes a piece of clay rolled into the size of a baseball and after kneading and patting it into the shape of the bottom of the vessel desired, she sets this pat on the rest provided for that purpose. A small amount of clay is then rolled into a rope, from one-half an inch in diameter and several inches long to somewhat larger dimensions, according to the size of the pot to be made. This is placed around the edge of the pat already made and is carefully pressed into place. It is then smoothed with a small piece of dried gourd rind. When this is finished more ropes are made, one at a time, and added as has been described. The only tools used are the hands, which are kept constantly moist by being dipped in water, and small pieces of dried gourd rind which vary in shape from round to long oval and slightly blade shaped pieces, and are usually about the size of a silver dollar for the round ones and proportionately the same size for the other shapes. The coiling of one rope above the other goes on until the vessel has grown to the size desired. Both the outside and inside are smoothed as the building continues and the walls shaped and thinned with the gourd tools. If a rope is too thick it is stretched and thinned with the fingers.

DRYING. After the pot is built up it is set aside to dry. It is never put directly in the sun at first, but after it has dried pretty well in the shade, to a point where evaporation will not be too rapid, it is put in the sun to finish drying. In the winter months it is usually set in front of the fireplace to dry, or may be put in the oven of the cookstove.

SCRAPING. When the vessel is sufficiently dried it is scraped with an old knife, a bit of glass or rubbed down with coarse sandpaper. This is done to make the surface smooth and in some cases to thin the walls in places where they are too thick.

SLIP AND POLISH. After the smoothing is done the pot is covered with a slip or wash of yellow ochre which is allowed to partly dry. The slip is applied with a bit of cloth or the fingers. A smooth, fine-grained stone, about the shape and size of the first two joints of a finger, is then used to polish the surface of the pot. Polishing stones may also be round but the long shape is preferred by most potters. The polishing is a long and tedious process. Over and over again the pot is slightly moistened with the ochre slip and polished again. The whole outer surface is polished. If the vessel is an open one, like a bowl, the inside is also polished. Some of the women use the ochre raw, when the color is yellow, while others burn it to make it red. After the polishing is done the vessel is ready to be fired. The high polish of this ware is due to this rubbing only, and not to any glazing process.

FIRING. In recent years some of the women have used the ovens of their kitchen ranges to bake their pottery, but this does not give the vessel as much strength and temper, as the old method of baking the ware in the open fire out of doors. In doing this care must be taken to prevent drafts that will crack the vessels. The potter must know exactly how to distribute the heat, flame, and smoke. The building of the fire and placing of the pots also requires time and knowledge. The fire is built on a level, clean-swept spot, not in a pit. Cedar wood, dried

thoroughly, is the best fuel to produce the clear flame necessary to burn the red pottery. It is broken into short lengths and arranged so as to have an even draft. After the fire has burned for a time and is reduced to red coals, a gridiron or heavy piece of metal netting is put over it, on which the pottery is stacked, usually upside down. Then the fire is built up around and over the pots, the top layers of which have been covered with broken pieces of old pots. When the red ware is made the flames or bits of burning wood must not touch the vessel, as this will make a blemish. An even heat is maintained and additional fuel is added as it is needed. The firing usually takes several hours to accomplish.

If the black ware is desired the pottery is placed on the grid, and covered with a heavy mass of damp cow manure which has been almost pulverized and then wet. This gives out a heavy black smudge which goes all through the pottery and turns it black. The polished surface shows a glossy glaze-like finish. The paste under it is grey-black to a solid black after firing. Often, before a pot was completely cool, the maker would smear it with a light coat of grease which soaked in and when rubbed with a soft rag improved the polish. The clay for both wares is the same color before firing.

SHAPES. In the old days shapes were simple. The largest pieces were storage jars, some as large as four feet in height and about the same in diameter. They were usually black but one sometimes found red ones. The usual form was globular, with a rim around the small opening in the top which might or might not have a lid fitted over it. Next came vessels about half the size of the large ones. These did not have lids and had a larger opening in the top. They stood about 16 to 18 inches high with rather rapidly incurving shoulders and a neck an inch or two high. These were temporary meal jars for the most part. The water jars came next, ranging from 10 to 16 inches in height. From rather narrow bottoms, rapidly outsloping sides rose to well rounded shoulders in which there was usually a slight dip. A flaring lip projected outward from the neck. There were many variations of these vessels. Large bowls for mixing purposes ranged from 10 to 20 inches in diameter and height. San Juan specialized in bowls of various sizes with dark red above and yellow or orange bases. Smaller bowls, sometimes with handles and again without them, sometimes ornamented with a row of knobs on the shoulder or wavy indented lines made with the fingers, were used to serve stews and other foods. There were also individual food bowls. Vases with double necks connected with a handle are common. In addition to these there were many other forms that are common to all Indian pottery of the Southwest. Now many animal figurines of cows, dogs, pigs, mountain sheep and other animals, and also bird forms, are made to sell. The potters are also producing vases suggestive of ancient Greece and other forms. All of these are made for commercial purposes. The pottery industry is a very important source of income to the Santa Clara and San Juan people.

Compiled by Jean Allard Jeançon from his original field notes.

The following titles are suggested for comparative reading:

1. Pueblo Pottery Making. Guthe. Yale University Press, 1925.
2. The Pueblo Potter—Bunzel. Columbia University Press, 1929.
3. Pottery of the Southwestern Indians—Goddard. Guide Leaflet No. 78 of the American Museum of Natural History, New York.
4. Pueblo Indian Pottery Making—Jeançon and Douglas. Leaflet No. 6 of the Indian Leaflet Series, Denver Art Museum.

San Ildefonso pottery, 1; Zuni, Hopi and Acoma pottery, 2; information on all makes, 3.

DENVER ART MUSEUM

DENVER, COLORADO

Department of Indian Art

NORMAN FEDER

Curator



OJIBWE, A CHIPPEWA WARRIOR

Leaflet No. 36 - November, 1931

THE OJIBWA OR CHIPPEWA INDIANS

LOCATION. The Chippewa Indians are a semi-nomadic hunting tribe of Algonkin stock now living on 10 reservations in Minnesota, 4 in Michigan, 1 in Montana, 1 in North Dakota, 4 in Wisconsin and on several in Ontario, Manitoba and the Northwest Territories in Canada. In 1930 there were about 24,000 in the United States and in 1905 15,000 were listed for Canada. This is the third largest tribe in North America. The tribe is steadily increasing. In 1910 the United States division was about 35 per cent full blood.

NAME. The name "Chippewa" is a comparatively recent corruption of the native word "Ojibway, or Odjibwe," meaning "puckered." The name is supposed to have been given because of the puckered seam on their moccasins. Their old name for themselves was "Anicinabe," meaning "first man."

HISTORY. The tribe was first encountered by the whites about 1640. They then were living around the eastern end of Lake Superior and in the Upper Peninsula of Michigan. About 1700, having come into the possession of firearms, they began a western movement, first pushing the Fox tribe to the south and later driving the Sioux westwards. Other bands went south toward Lake Erie and forced the departure of the Iroquois. In 1815 they began to make treaties with the United States. In the period 1850-80 the present reservations were set up, on which the tribesmen have lived in peace ever since. They never were at war with the whites, though they were courageous and successful fighters against other tribes. Despite the large size of the tribe it never became much involved in the development of the country, probably because of the rather remote area which it occupied.

HABITAT. The homes of the Chippewa are located in heavily timbered plains and low hills dotted with hundreds of lakes and traversed by many streams.

DWELLINGS. The Chippewa used four kinds of dwellings, the domed wigwam, the peaked wigwam, the bark house and the tipi. While there was no strict rule about the matter, the first two types were usually used in the winter and the last pair in the summer. The domed wigwam had a circle of poles bent over in a series of arches which were covered with reed mats or birchbark. The peaked lodge had a long series of A-shaped arches connected with a ridge pole. It also was covered with reed mats or birchbark. The bark house was a rectangular structure with a framework of poles making the walls and peaked roof, and an outer covering of sheets of bark. It closely resembled the Long House of the Iroquois, see leaflet 12. The tipi was a conical tent having a covering of birchbark, cloth or boughs resting on a framework of poles. In most details it resembled the tipi of the Plains tribes described in leaflet 19. All of these structures were the homes of single families. All had smoke holes over central fires, around which were placed the beds, clothing, weapons and other possessions of the family. Large round log dance houses were sometimes built. All of these types of houses are still used to some extent, though buildings of white design are coming into use.

CLOTHING. Before the coming of the whites all clothing was made of skin or of woven vegetable fibre. Hides were tanned and clothing made by the women. Sewing was done with animal sinew and thorn or bone awls. The women wore a long dress made from two deer skins over an underskirt of woven nettle fibre, leggings and moccasins. Men wore breechcloths, long, tight leggings and moccasins. Skin coats and shirts were made from white patterns. Additional warmth was given by rabbit skin blankets. Blankets and broadcloth were introduced long

ago and made into most articles of clothing. The head was covered with caps of burdock leaves, turbans of fur or cloth or peaked cloth hoods. Men wore moose hair roaches. Ear and nose rings, bracelets, necklaces and many kinds of beaded ornaments were worn. Present day clothing is mostly of white manufacture.

FOOD. Though the Chippewa were primarily hunters and fishers, they did depend to a considerable extent on vegetable goods, both wild and cultivated. The summer settlements were in localities favorable for gardening in which corn, squash, pumpkins and potatoes were raised. Wild rice was a very important food. Berries, fruit and acorns were extensively eaten. Maple sugar and syrup were of great importance as seasoning to replace salt, which was unknown in early times. Flour, salt and water were mixed and baked into "Legolet" bread. Moose, deer, bear and rabbit were the main meat producers, though all animals trapped for fur were eaten but the marten. Ducks, pigeons and other wild birds were eaten. Meat was either eaten after boiling or roasting or dried for winter use. Many kinds of fish were caught with nets, spears or hook and line and eaten fresh, or dried for storage. Water was very often boiled with the shoots of spruce, raspberry and other plants before drinking.

Most families ate one big meal in the morning and on and off through the day according to individual fancy. Meals were prepared by the women and eaten from birchbark and wooden dishes. Long ago clay vessels were used.

BASKETRY was weakly developed because of the ease with which birchbark could be worked. Basketry was made from willow branches, basswood bark and black ash splints in wicker and checker technics. Most of them had handles and covers. Small coiled baskets were made from sweet grass. Some color was used, but the designs were very simple.

BEADWORK began early, but only a few white beads were obtained so that little was done. In fairly recent times large quantities of beads in all colors have made an expansion of the art possible. The early designs were geometric or conventionalizations of natural forms. In more recent times highly colored, very realistic flower patterns have been developed. The beads are sewn on all sorts of skin and cloth articles with the "spot" stitch—see leaflet 2. The designs are worked out with the aid of birchbark patterns. Beads are also woven on simple frames. Large shoulder bags, garters, moccasins, headbands and belts are the objects most usually decorated with beads.

BIRCHBARK was made into canoes, dishes, storage boxes of various sizes, called makuks or mococks—see heading 10, leaflet 25—and sap buckets. Long rolls were sewed together for the covering of domed lodges and tipis. Transparencies are made by folding thin sheets and biting designs on them. When unfolded and held to the light symmetrical patterns are shown. Patterns used as guides in the making of beadwork are cut out. Maps and memory-aiding symbols are scratched on rolls of the bark. Pictography of this kind was very highly developed by the Chippewa.

TWINE, a very important article, is made mostly from the fibre under the bark of the basswood tree. Slippery-elm and nettle fibres are also used, as is deer sinew.

TEXTILES. Bullrushes (*Scirpus validus* Vahl) are woven into large floor mats, often showing simple geometrical designs in plain colors. In the northern part of the area cedar strips are used for this purpose. The mats which cover the wigwams are woven from cat-tail reeds (*Typha latifolia*).

Flat, square bags were and still are woven from the bark twines mentioned above. Tamarack roots were split and made into bags.

Flat yarn bags of various sizes are made from raveled blankets. They and the fibre bags are woven on a frame of two sticks, set upright in the ground. The warps hang from a strand stretched between the sticks, and the waft is twined diagonally through the warps, beginning at the top, which is the bottom of the finished piece. These bags have elaborate geometrical figures in several colors. Human and animal designs are also used.

Strips of cloth are woven into bands for making rag rugs. Bands were also made from bark and yarn. Long belts of yarn netting are very common. The northern bands weave blankets of rabbit skin.

Fishing nets are made from machine made twine. Formerly nettle fibre was used.

STONE ARTICLES. Knives, 2 sizes of axes and pipes were made from stone.

BONE ARTICLES. Awls, arrowheads, needles, knives, hoes, pipes, spurs and small ornaments were made of bone or antler.

WOOD was worked into bowls, spoons, drums, frames for snowshoes, sleds, etc., snow shovels, paddles, grave boxes and markers, sugar troughs, balls and bows and arrows. Wood was etched with a fine point in simple designs which were colored.

EMBROIDERY was done on birchbark and skin with colored grasses and porcupine quills. Applique was done on cloth with colored ribbins.

RELIGION. The spiritual life of the people was centered around the Midewiwin, or Grand Medicine lodge. Members pass through the 8 degrees of the order by initiation. The society meets, usually once a year, to perform its healing and initiatory rites in a special long mat lodge. There seems to be no conception of one god or great spirit, the members praying to one chief medicine spirit and a number of subordinate beings. There was a belief in individual guardian spirits. Healing and the teaching of ethical conduct are the principal aims of the society. Dreams were very important. The medicine men are very conservative and have much influence. They were great conjurers.

TRIBAL ORGANIZATION. Owing to the vast extent of territory occupied by the tribe there is no central organization, but a large number of bands, each under their own elected leaders, whose powers are not great. The tribe is divided into about 20 clans, each with a bird or animal totem representing their mythical ancestors. Descent is through the father.

MUSIC. The Chippewa are extremely musical. There are hundreds of songs to accompany every phase of activity and new ones are constantly being improvised. Drums of several kinds provide the accompaniment. Rattles are only used by the members of the Medicine lodge. Flutes were used while courting by the young men.

GAMES of chance were those involving the use of dice or the guessing of the location of some hidden article. Sticks were used for counters. More strenuous sports were lacrosse and the women's double-ball game, both involving much running on large fields. Games of dexterity were cup-and-ball and the awl game.

TRANSPORTATION. The vast number of lakes and streams in the Chippewa country made these Indians depend on water transport in birchbark canoes to a very great extent. They used the horse but very little, if at all. Winter travel on foot, often with snow shoes, was very extensive because of the long hunting trips.

CUSTOMS. A mock fight between two groups of relatives followed the birth of a child. The first year of life was spent on a cradle board. Naming procedures were very complicated. Children were very carefully brought up. Many toys were provided for their amusement. Marriage was out of the clan. Polygamy, once common, no longer exists. Young people made their own matches and then sought parental consent. A feast celebrated the engagement. The couple first lived with the bride's family. The dead were dressed in their best clothes, and after a form of service conducted by the members of the Grand Medicine lodge, was wrapped in birchbark or put in a box and buried with the feet to the west. Food and tools were put in or near the grave and markers were set up. Mourners wailed their grief, wore various signs of mourning for about a year, or kept a "spirit bundle," its nucleus a lock of the deceased's hair. The people are pleasant, with a good sense of humor. Both sexes cooperated to an unusual extent in the work of the camp. Handcraft was kept at a high level of excellence. Good workmen were honored.

Compiled from the following sources by F. H. Douglas:

Bureau of American Ethnology, Washington.

1. Chippewa Customs—Densmore. Bulletin 86.
2. Chippewa Music—Densmore. Bulletins 45 and 53.
3. Uses of Plants by the Chippewa—Densmore. 44th Annual Report.
4. The "Midewiwin" or Grand Medicine Society of the Ojibway—Hoffman. 7th Annual Report.
5. Article on "Chippewa"—Mooney. Handbook of American Indians, Bulletin 30, vol. 1, page 277.

Milwaukee Public Museum.

6. The Dream Dance of the Chippewa and Menominee of Northern Wisconsin—Barrett. Bulletin, vol. 1, article 4.

Photographs, 1, 2, 3, 4, 6; details of all activities, 1; musical details, 3; religious details, 4, 6.

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BLACKFOOT WOMEN IN FULL DRESS
(American Museum of Natural History)

Leaflet Nos. 37 and 38 - December, 1931

THE BLACKFOOT INDIANS

Reprinted July 1967

THE BLACKFOOT INDIANS are a semi-nomadic, non-agricultural, hunting people belonging to the Algonkin linguistic stock. There are three divisions of the confederacy, the Blackfoot proper, or Siksika, the Blood, or Kainah, and the Piegan, or Pikuni. The Blackfoot, Blood and a few Piegan live on three reservations in southwestern Alberta, and the main body of the Piegan on a reservation in northwestern Montana, directly east of Glacier National Park. The total 1931 population of the three is about 5,000, an increase over 1922. The Piegan were about 55% full blood in 1910. The Piegan number as many as the other divisions combined.

HISTORY. Tribal traditions as to the prehistoric wanderings of the tribe are so vague that nothing can be said surely about this matter. The language is so very different from other Algonkin tongues that the separation from the main body of the stock must have occurred very long ago. When first visited by the white man, probably about 1750, the three tribes were ranging over an immense area immediately east of the Rockies, centering on the headwaters of the Saskatchewan river in Alberta and ranging north to the Peace River and south to the Yellowstone. The eastern limit was in the neighborhood of the present Saskatoon and Regina in Saskatchewan. Before the coming of the horse in the early 18th century the tribes remained in the western part of their territory. But with the means of easy travel they wandered far and wide, going over the mountains to Salt Lake and south to New Mexico. Not until 1860 was there any considerable penetration of their country by the whites, and only after 1880 did it become extensive. Hence they retained their original culture much longer than many other tribes. When first found the tribe seems to have numbered about 10,000. Epidemics and starvation caused by the extinction of the buffalo in 1883 caused the greatest reduction in their numbers.

HABITAT. The home of the Blackfoot is a great expanse of rolling prairie country, broken by gulches and bad lands and small ranges of mountains. On the west are the foothills of the Rockies, which are in general not visited much by the tribes, since they are a plains rather than a mountain people.

PHYSIQUE. The people are tall and very well built, many of the men being six feet high and broad in proportion. They have long heads, high cheekbones, large noses, black hair and brown skin. The women are proportionately large and are often very handsome.

TRIBAL ORGANIZATION. The three tribes of the confederacy are split up into bands, the members of which are to a very large extent related through the male line. The exceptions are persons who have come in from other bands, such transfers being very easily accomplished. Some writers have supposed that the bands were true gentes or groups related in the male line, but available evidence is against this theory. Each band had a head man who was chosen for ability in war and peacetime leadership and especially for the possession of wealth and the willingness to dispense this wealth for the public good. Each of the tribes had a head chief, not regularly elected, but generally agreed upon by the leaders. This office was not hereditary, but was quite likely to be kept in one band. All matters were decided in councils of the band

leaders and heads of the men's societies, under the chairmanship of the head chiefs.

SOCIETIES. Each tribe had a series of men's societies in which membership was based on age. Young men purchased membership in the most recently organized society, remained usually four years, and entered the next in the series by purchase, continuing thus until the last was reached. There were from 10 to 14 societies in each of the three tribal divisions. Today many of these organizations are extinct. The societies as a whole were called "All-comrades." The societies kept order at all times, were a permanent military force, had charge of the buffalo hunt and were a means of social recreation for their members. All had dances, rituals and costumes peculiar to themselves. Among the Blackfoot and Blood there was one woman's society. There are also a few loosely organized societies which give social dances. For the religious societies see the next paragraph.

RELIGION. The principal god of the tribe is the Sun, who is often thought of in the guise of Old Man, a being full of many contradictions of character. Everything comes from the Sun, and many prayers, gifts and sacrifices are made to him. Besides the Sun the people revere other minor deities which are personifications of natural forces in the sky, on earth and beneath the waters. Thunder, the Earth and Winter are typical beings of this type. A mysterious force which fills all things in nature is called "power" or "medicine." Animals and some inanimate objects have more power than man and hence are greatly revered. Through dreams man may learn how to obtain some of this power. In a dream some bird or animal will give instructions as to how to make a bundle and the songs and ritual which must accompany it. The person who receives these revelations carries them out and through the possession of the bundle possesses a certain amount of power. Societies also own bundles and rituals. These bundles are usually collections of parts of birds and animals, pipes, sticks, stones, etc., wrapped up in several layers of skin or cloth. Bundles may be transferred from one owner to another by purchase. Many bundles have long histories and have grown greatly in importance with the passing of years. Besides the bundles there are medicine pipes with similar rituals and influence. Shields, war-bonnets and painted tipis are other things which are more or less filled with power and accordingly possess rituals and transfer proceedings. The ceremonies relative to the making, use and transfer of the bundles and other objects mentioned constitute the major religious activities of the Blackfoot, who have developed this system more than any other tribe.

Besides these ceremonies there are many religious dances belonging to the societies, and the Sun Dance or Medicine Lodge of each division. There are both medicine men and women in charge of healing and religious matters. There is a belief in a future life in a rather dreary, unpleasant land. About half of the people are now Christian, mostly Roman Catholic.

DWELLINGS AND VILLAGES. Until recent times, when some wooden houses have been built, the only home of the Blackfoot was the conical tent or tipi, made by stretching a cover of hide or canvas about a frame of poles. The four pole foundation is used. Tipis are usually

quite elaborately painted with designs connected with the medicine or power of the owner. The tipi is extensively used today, especially in the summer. Throughout most of the year, in the old days, the bands, or small groups from within the bands, moved their tipis about according to their needs for food, protection against enemies, etc. In winter the villages were usually in well-protected areas and in the summer out on the open plains. Once a year, in early summer, all the bands in each tribe assembled for tribal councils and the Sun Dance. The tipis were set up in an immense circle in which the tents of each band had a regular place and order. Often the tipis of the chiefs and band leaders made up an inner circle. Villages could be dismantled and put on the march very easily and quickly. The women, who had entire charge of making and setting up the tipis, took off the covers and loaded them and their other possessions on dog or horse travois (see under Transportation). For details of tipi construction and furnishings see leaflet 19.

FOOD. The meat of buffalo, elk, deer and antelope formed the largest part of the diet, though most other animals except the bear were eaten. Though the tribes surrounding them ate the dog the Blackfoot did not. Fish and waterfowl were formerly not used, but this is no longer true. Meat was eaten fresh after roasting or boiling, smoked and dried for future use, or made into pemmican, a pounded mixture of meat, fat and often wild fruits. No food crops were cultivated, all vegetable food being wild. The service or sarvis berry, (*Amelanchier oblongifolia*) was the most important vegetable food. Wild cherries, (*Prunus demissa*), buffalo berry, (*Eleagnus argentea*), bull berry, (*Sheperdia argentea*), dog-feet, (*Disporum trachycarpum*), and red willow berries were other extensively used fruits. All were both eaten fresh or dried for storage. Stalks of the cow parsnip (*Heracleum lanatum*) were roasted. The roots and bulbs of the wild potato (*Claytonia lanceolata*), wild onion (*Allium recurvatum*), smart weed (*Polygonum bistortoides*), milk vetch (*Astragalus carolinianus*), bitter root (*Lewisia rediviva*), wild turnip (*Lithospermum linearifolium*), evening primrose (*Musenium divaricatum*) and camas (*Camassia esculenta*) were roasted or boiled or dried. Wild mint (*Mentha canadensis*), was used for flavoring.

COOKING was done by roasting or boiling. Vegetable foods were roasted in the ashes or in pits over hot stones. Roots were pulverized and used to thicken soup. Meat was preferably boiled, though broiling was done. In historic times boiling has been done in metal kettles procured from white traders. It is possible that long ago some pottery was made. In an emergency food was boiled with hot stones in a buffalo paunch or even a green hide. Bowls and spoons were made of wood, horn and bone. Metal knives and axes replaced those of stone.

FIRE was formerly kindled by rubbing pieces of wood. This method was supplanted by the flint and steel which came with the whites. When traveling, bits of smoldering punk were carried in a closed horn. Fires were built in the tipis and also outside in good weather. Fallen trees and branches made the fuel.

CLOTHING. Men wore skin shirts, leggings, breech-cloth, moccasins and robe. The shirts were made of two deer or antelope skins. There were sleeves, but the sides were not sewn, being only tied together in one or two places. They were decorated with quilled or beaded bands,

fringes and white weasel skins, those for full dress having the most trimmings. The hip-length leggings were tied to a belt and often painted yellow with black horizontal stripes. They were cut tight around the ankle and instep. Robes were made of buffalo hide, decorated with painted designs. Those for winter had the hair left on. Fur caps made from whole skins were worn in winter. The feathered war-bonnet seems to have been used in early times much less than by most plains tribes. More recent pictures show it in more general use. The type having the head feathers standing straight up seems to have been preferred to that with drooping plumes. Skin hoods with horns attached were often used. While eagle feathers were used in many ways, they do not seem to have been as much favored as white weasel skins. The young men were especially inclined to dandyism, spending most of their spare time in arraying themselves in elaborate garments. The tribe as a whole was famed for its fine clothes.

Women wore long dresses of two elk or deer skins, trimmed, especially on the yoke, with beads, quills and fringes. The knee-length leggings, now made of cloth, are trimmed with beads on the cuff and on the seam. The leggings are pulled down over the uppers of the moccasins. Headgear was seldom worn. Moccasins for both sexes had hard rawhide soles and beaded or quilled soft uppers. Children wore replicas of their parents dress.

There were endless special costumes for ceremonial use and ornaments of many kinds for ordinary use. Both sexes painted the face, but the body very little.

Cloth made by the whites has largely supplanted the old clothing. But the moccasin has held its own to a great extent.

HUNTING AND TRAPPING. The Blackfoot country was full of game of many kinds and in vast numbers. While all animals were pursued and eaten by the Indians, the buffalo was the main object of the hunt. Individual hunting was forbidden, the process being a community affair under the direction of the men's societies. The chief method of catching the buffalo was by impounding. On an expanse of prairie ending in a low cliff piles of brush or stones were built in a crude V, its slightly open apex at the edge of the cliff. At the foot of the cliff a large corral of poles and brush was built. A herd of buffalo was worked into the V and then driven over the cliff and into the corral, where the animals were killed. In later times herds were surrounded and shot down by mounted men. Before good repeating rifles were available only enough animals were killed to fill the needs of the tribe. But towards the end of the buffalo period many were shot just for the fun of it. Antelope were also driven into a V, but an open pit replaced the cliff and corral. Deer and small game were caught in loop snares, or killed after careful stalking by individual hunters. Log deadfalls were built for coyotes, foxes and wolves. Fish were caught with weirs and basket traps. As eagles were too difficult to hit with arrows or bullets they were caught by hand. Pits were dug in which men crouched under brush covers. Bait placed on the brush attracted the eagles, which were caught by the legs when they alighted.

WAR AND WEAPONS. The Blackfoot were celebrated fighters, war apparently being their chief occupation, at least after the coming of the horse. The Sarcee, their nearest neighbors, were unmolested and

with the Gros Ventre they were usually at peace. But all the other tribes around them were considered enemies. The tribe was never officially at war with the United States or the Canadian government, but the whites were always received with hostility, except, of course, in individual cases. Horse stealing was the principal cause of warlike raids. Parties were sometimes away two years or more. Expeditions for revenge or in pursuit of coups and scalps were also common. Coups were feats of daring in war, the touching of an enemy being the greatest. Scalping was less important. Until firearms were obtained bows and arrows, lances, stone-headed clubs and knives were the weapons used. Fortifications were only built in great emergencies, charges on horseback being the favorite way of fighting.

TRANSPORTATION. Before horses were obtained in the early 18th century all travel was on foot. Burdens were carried on dogs with the aid of the travois. This is a V-shaped frame of poles, the apex resting on the animal's back and the ends dragging on the ground. Rods or netting are fastened across the poles behind the animal. The same frame, greatly enlarged, has been used since the coming of the horse. The tipi cover is the heaviest article to be carried. In it are wrapped all the possessions of a family. There were no canoes, crude rafts being built when a water crossing was necessary. Saddles were made of wood or horn. The frame was covered with green hide which shrunk in drying, thus drawing the pieces tightly together. Men's saddles were little more than pads, while those for women had high pommels and cantles. Stirrups were of hide. Hair or hide ropes served for bridles. Babies are carried on skin-covered cradle boards with high rounded tops decorated with beads, quills and fringes. The babies are placed in a fur-lined pocket of skin attached to the board. Sleds were not used, though the boys slid down hill on buffalo ribs. Snowshoes were only found in the extreme north of the range.

SKIN DRESSING. The skins of many animals were treated with the rawhide or soft dressing methods described in leaflet 2. Scraping and thinning with bone or metal tools, drying, rubbing with brains, washing, softening by pulling, and smoking were the methods employed. A woman's worth as a wife and her position in the tribe were to a considerable extent determined by her skill in this field of endeavor. Though skin clothing has largely disappeared, the continued use of moccasins and rawhide bags has kept the art alive. Soft dressed skins were made into clothing, long pipe bags, shorter paint and toilet pouches, saddle bags, cruppers, awl cases, knife sheaths and various other small objects. The pipe bags have a narrow beaded field at the bottom, long, bottom fringes without quilling, and bead edging around the mouth, which is cut into four ear-like flaps. Awl cases usually have blue beads and no closing flaps. Rawhide was made into shields, moccasin soles, large flat envelopes, cylindrical cases for ceremonial objects, and parfleches, or large folding cases with side and end flaps fastened with laces. Black-foot parfleches have angling flaps, three pairs of lace holes and side loops, the latter feature being peculiar to the tribe. The envelopes, cases and parfleches are decorated with painted geometrical designs. Curving lines on parfleches are a Blackfoot characteristic.

QUILL EMBROIDERY was formerly carried on very extensively and skillfully, but is now almost extinct, the introduction of beads being largely responsible. The quills were taken from the porcupine, or some times from bird feathers. The porcupine quills were dyed with vegetable dyes, an art which has long vanished. It is known that the yellow came from the moss *Evernia vulpina*. For many years the colors have been obtained by boiling the quills in a kettle along with cloth dyed the desired color. The dyed quills were flattened and applied to the skin or cloth in a great variety of ways. Eighteen methods have been discovered and analyzed. They are discussed and pictured in reference 1, pages 55-63.

BEADWORK on skin or cloth has been extensively carried on since manufactured beads became available. The beads are fastened in place with sinew with the "spot" stitch, which gives a uniform surface lacking the ridges made by the "lazy" stitch. See leaflet 2 for information on these sewing technics. Stepped and checkered triangles, diagonal checker rows and horizontal stripes and combinations of all three are the most typical designs of Blackfoot beadwork. Moccasins are likely to have a solid U-shaped design on the instep. Yellow, blue and light red are more common in backgrounds than white. Flower designs and woven work are recent innovations which have drifted in from the north central Algonkin tribes, such as the Ojibwa—see leaflet 36. Beadwork was and still is applied to everything made of skin or cloth. The small beads used in this work are all of white manufacture. Beading is entirely the work of women.

MUSIC. Like all Indian tribes the Blackfoot sing a great deal. Every action in their complicated rituals is accompanied by one or more songs, and as some sort of ceremonial practise goes with almost all undertakings, both large and small, the total number of songs is very large. Both men and women sing. Songs are accompanied with drums and rattles. The one-headed hand drum is the most common instrument. It has a skin head stretched on a wooden band with cross strings behind for a handle. For large dances drums were once made from hollow logs. Now washtubs, barrels, etc., are used. Skin rattles filled with pebbles, and eagle wing bone whistles were used also. Flutes are made to a very limited extent.

GAMES. Practical jokes are popular. Children played games like those of white children, such as tops, hide-and-seek, and tag. Shinny, a game in which arrows are thrown at a netted wheel, a ball game involving kicking, wrestling, a game of opposing sides kicking each other, and swimming were amusements of the young people on which there was in general no gambling. Betting for high stakes accompanied dice games and those in which the guessing of a hidden object was involved. The latter was played by teams and a score was kept with wood counters. Continuous singing was kept up.

TOBACCO AND SMOKING. Tobacco, (*Nicotiana attenuata*), was cultivated. The dried leaves of kinnikinnick (*Arctostaphylos uva ursi*) and princess pine (*Chimaphila umbellata*) were used to supplement the supply of tobacco. Both men and women smoked. The pipes are of dark green to black stone. Any red pipestone pipes which were used

came from the Sioux country to the southeast. The stems are of smooth wood, rounded and pierced with hot wire. Women's pipes are smaller than men's. The sticks for tamping or stoking are short. Smoking is an important part of ceremonial proceedings, but is also done for enjoyment.

CUSTOMS. Children are born in isolated tipis. Births are followed by feasting. Children are carefully brought up, being disciplined and taught good manners as well as how to work. Marriages are either arranged by parents or follow a courtship. Gifts were given as a purchase price. Polygamy was practised extensively. The couple live with the man's band. Divorce is easy, the only requirement being that the purchase price must be returned. Marriage is usually out of the band, but not necessarily so. Labor was evenly divided, the man providing the food and protection and the woman caring for the home and children. Hospitality was stressed, and generosity to the poor and unfortunate. The sick were treated by the medicine men, in whose art were combined a considerable knowledge of herb healing and care of wounds with many magical beliefs and practises. The dead were formerly placed in trees or isolated tipis but are now buried. If death comes in a tipi it is abandoned for fear of ghosts. Mourning is principally done by the women and is attended by cutting the hair and skin and sometimes by the removal of part of a finger. There is no definite length to the mourning period. The sweat lodge was extensively used in ceremonies and in daily life. A daily cold bath was customary the year around.

Compiled from the following sources by F. H. Douglas :

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Anthropological Papers.

1. Mythology of the Blackfoot Indians—Wissler & Duvall. Vol. 2, No. 1.
2. Material Culture of the Blackfoot Indians—Wissler. Vol. 5, No. 1.
3. Social Life of the Blackfoot Indians—Wissler. Vol. 7, No. 1.
4. Ceremonial Bundles of the Blackfoot Indians—Wissler. Vol. 7, No. 2.
5. Societies and Dance Associations of the Blackfoot—Wissler. Vol. 9, No. 4.
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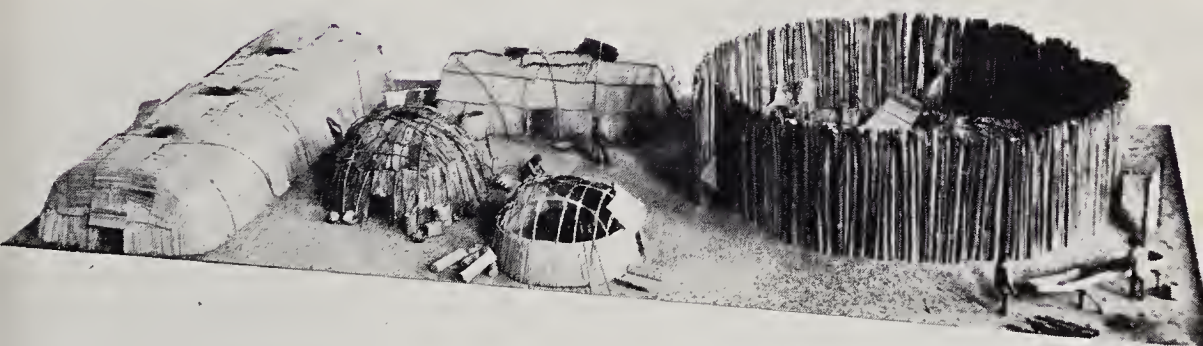
Very full bibliography, 2; photographs 2, 10, 13; drawings of crafts and material culture, 2, 3, 7; food and clothing, 2, 12, 13; religion and dances 4, 6, 12, 13; botanical notes, 2, 13; mythology 1, 12, 13; quillwork, 2; beadwork notes, 7; mocasin patterns, 2; parfleche designs, 2, 7, 11.

DENVER ART MUSEUM

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Department of Indian Art

RICHARD G. CONN, CURATOR



FROM A MODEL IN THE PEABODY MUSEUM

Leaflet No. 39 - January, 1932

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NEW ENGLAND INDIAN HOUSES, FORTS AND VILLAGES

Colonial Period

ALGONKIN. All of the New England Indians were members of this linguistic stock. For information about tribal names and locations, history and population see double leaflet 27-28.

VILLAGES. The aboriginal people living in New England disappeared so long before scientific investigation began that accurate information as to their tribal organization is largely lacking. To the early writers each group living in one place or following one local leader seemed to be a separate tribe, whether it had a really independent political existence or not.

Each of these "tribes" held an area of land suitable for hunting, fishing and agriculture which was marked by well known and recognized boundaries. If the band was small and its land had woods, streams and fields close together, there was one more or less permanent village, to some extent fortified. But if the hunting, fishing and farming lands in a tribe's possession were widely scattered the people were forced to move about seasonally. The winters were spent in wooded hunting territory, the early springs by the fishing streams or along the shore, and the summers in the fields. The villages were moved about to meet these needs. While the villages usually moved in one unit, individual families often made side trips in search of food.

FORTS. The 25,000 Indians living in the area in primitive times were much inclined to fight each other, and all the bands were in constant danger of attacks from the Iroquois and later from the whites. Hence forts were necessary and common. It was the general practice for each rather sedentary band to fortify its village and for the wanderers to have one or two such forts in their territory to which they fled in time of danger. Log palisades 10 to 12 feet high, with supplementary earthworks, were the means of defense. The logs were set very close together, the crevices between serving for loop-holes. The entrance was through a narrow passage formed by the overlapping of the ends of the circle. The picture shows this clearly. Small forts, 40 to 50 feet across, surrounded one or two wigwams. The large refuges sometimes covered several acres of ground and enclosed as many as 75 houses. The forts were round, square or rectangular.

HOUSE TYPES. From about the Maine boundary southwards, round or rectangular mat or bark covered wigwams were used. In Maine a conical, bark covered wigwam was more common, though the other types were also used. Geographical position rather than tribal practise seems to have been the determining factor in deciding which type was to be used. The birch-bark and conifer poles needed for the conical form were more common in the north, while to the south flexible saplings and reeds for matting were more easily to be found.

FRAMEWORK

DOMED-WIGWAM OR ROUND HOUSE. This house was made by setting a row of slender, flexible poles 2 to 3 feet apart around a rough circle 10 to 16 feet in diameter. Opposite poles were bent over and lashed together with bark fibre cord in a series of arches 6 to 8 feet high. One or more rows of horizontal poles were fastened in place around the walls, thus making a strong, light domed framework. The poles were cut and the frame made by men. One family lived in a house of this kind.

Such dwellings were, and still are, used by many other tribes of the Algonkin stock. See leaflets 25 and 36.

LONG HOUSE. The essential details of the construction of this house are the same as for the round house, the difference lying in their size and shape. There was a great variation in the size of these buildings,

lengths ranging from 30 to 200 feet being given by the historians. It is probable that about 20 by 40 was the average. The long sides had pairs of poles arched over and connected by horizontal members. The ends were either perpendicular or arched in to a slight extent. There were several doors and smoke-holes, according to the size of the building. The small and medium houses were communal dwellings for several families, while the large ones were used for ceremonial purposes.

CONICAL WIGWAMS had the simplest framework of all. The butts of a number of long, stout poles were set in the ground around a circle and the tops locked together, thus forming a conical framework. Information as to the exact details of the placing of the poles, interlocking of the tops, etc., is lacking, but it is probably safe to suppose that in these points this wigwam resembled the tipi of the Plains Indians. But unlike the tipi the wigwams seem to have been rather permanent structures grouped together in villages surrounded by palisades.

WIGWAM COVERINGS were made from large sections of bark, or from matting made of flag leaves sewed together with bark cord. Women did this work. In the spring big pieces of birch, chestnut or oak bark were removed from the trees and pressed flat under heavy timbers. Possibly elm, pine and hemlock bark were also used. Often sections of thin birch bark were sewed together in long strips. The long edges of pieces 3 or 4 feet in length were sewed together with split spruce root. The ends of the finished product were reinforced with thin strips of wood. These long sections were light, waterproof and durable and could be rolled up for easy transportation. Mats 3 to 4 feet wide and 8 to 10 feet long were made by sewing flag leaves together with Indian hemp or bark fibre cord. Like the birch rolls they had end reinforcing and strings attached to tie them to the framework. The wigwams of poor people were sometimes covered with a thatch of reeds, grass, corn-husk or leafy boughs.

There seems to have been no rule as to which of these types of covering went with each sort of wigwam. The birch-bark rolls probably were more or less confined to the conical wigwam area in Maine, but the bark or flag mat covers were evidently used about equally elsewhere. Early writers say that the bark covered lodge was warmer and tighter than one finished with matting.

The mats or pieces of bark were tied to the frames in overlapping layers, the bottom row being put on first and the others above it like shingles. Flexible poles were often fastened on outside the cover to keep it in place. In putting on the covers openings were left for doors and smoke holes. The smaller types had two doors, usually on the north and south sides. Two doors were provided so that the entrance could always be out of the wind, the one toward the wind being closed with a piece of bark. The small houses had one smoke hole in the center of the roof. In windy weather a screen, controlled by a pole reaching from the ground, was put up to keep the smoke from blowing back into the room. The large communal and ceremonial houses had several doors and smoke holes. The doors were about three feet high.

INTERIOR ARRANGEMENTS. In the round and conical houses, unless they were unusually large, there was a central fire, often surrounded with stones. In the large houses there were several fires. In all but temporary or poor homes there were platforms built against the wall, a foot or so high and of varying width, on which the people sat and slept. The walls of the more permanent dwellings were lined with fine rush matting trimmed with embroidered or painted designs.

Mats and animal skins were piled thick on the beds. Skins closed the entrances.

FIRE was usually made by striking a spark in tinder, though the friction method was also used. Fallen branches and trees provided the fuel, though trees were cut down occasionally. The butt was laid in the fireplace and pushed along as it was consumed. Cooking utensils were hung over the fire. Frames for drying and smoking food were often built over the fires. If additional light was needed small torches were made from splinters of pitch pine.

HOUSEHOLD UTENSILS. Before the coming of the whites cooking was done in round bottomed baked clay and soapstone pots of several sizes. But metal kettles very generally supplanted these after they became available. Trays, bowls and ladles of graceful form and uniform thickness were made by alternately charring and scraping knots of maple and other hardwood trees. Smaller ladles and spoons were made in the same way from mountain laurel, called "spoon wood." Birch bark was made into boxes, buckets and dishes. These were made watertight by sealing the seams with spruce-gum. The dark inner side of the bark was on the outside of these vessels, and was decorated by scraping so that the light under bark showed in floral patterns. Colored porcupine quills were often wrapped around the rims. Large wicker and splint baskets were used for carrying various materials in quantity, and bags made in a twined weave from many vegetable fibres served for carrying and storing smaller objects. In prehistoric times only stone tools were used.

Compiled from the following sources by F. H. Douglas:

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WICHITA INDIANS
Bureau of American Ethnology

Leaflet No. 40 - January, 1932

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THE WICHITA INDIANS and allied tribes
WACO, TOWAKONI, AND KICHAİ

THE WICHITA CONFEDERACY is made up of four tribes belonging to the Caddoan linguistic stock. Wichita, Waco, Towakoni or Tawakoni, and Kichai. The life of these tribes was a combination of the semi-sedentary, agricultural existence of the south central tribes and of the wandering, hunting life of the Plains peoples. Today the four groups are living on allotted land in Caddo County, in western Oklahoma, to the north of Anadarko. The 1931 population of the combined groups is 598. All but a few dozen are Wichita. This tribe has been increasing steadily in recent years. The Wichita were over 90 per cent full blood in 1910.

While these four tribes were once distinct, they have lived together so long that they have one culture. No information is available as to small tribal differences in customs, etc. The Wichita, Towakoni and Waco speak dialects of the Caddoan type which are mutually intelligible. Kichai is a related language but is not understood by the others.

HISTORY. The Wichita were found by Coronado in 1541 in central Kansas. Osage and Chickasaw raids forced them southwest to the upper reaches of the Red and Brazos rivers in northeast Texas. Until 1837 they roamed the country around the Wichita mountains in southwest Oklahoma. From then on they were placed on a series of reservations in the general neighborhood. In 1867 their present home was settled.

The Towakoni and Waco were found in the early 18th century on the middle of the Brazos and Trinity rivers in eastern Texas in the general neighborhood of the present city of Waco. They remained in this region under Spanish, French, Texan and American rule until 1855, when they were placed on a reservation on the Brazos, from which they were driven by the Texans in 1859. They then joined the Wichita.

The Kichai formerly lived between the Red and Trinity rivers in eastern Texas. The principal village of 1772 was near the present Palestine, Texas. In 1855 they joined the Waco at the Brazos reservation and fled with them to the Wichita.

HABITAT. High, rolling, broken prairie, with sandy soil and a few well timbered watercourses. Rainfall was slight, but the country was fairly well watered in places.

PHYSIQUE. The people are short and stocky, with a noticeably dark skin.

SOCIAL ORGANIZATION. The tribes were divided into village units, each under the leadership of a chief. The chieftainship did not pass from father to son unless the son displayed ability, bravery and generosity equal to that of his father. Generosity and kindness were the most important of these qualities. The chief was elected by the leading warriors, and was at all times responsible to them. Yet his power seems to have been greater than among most Plains tribes. Under him was a sub-chief who had entire charge of the moving of villages and of the choosing and laying out of new sites. The elaborate ceremonies were in charge of medicine men and priests, helped by one or more servants chosen from the people. These might later become medicine men. Rank in the village was determined by ability in war and by the possession of wealth. There were no clans or other exogamous groups.

SOCIETIES. There were religious societies for men and women. They were semi-secret and could be entered by any one at will. A slight payment was made to the narrator of the traditions of the society. There were no hereditary memberships.

RELIGION. The Wichita gods are called "dreams." There are heavenly gods and those on earth. The heavenly gods are headed by the Creator. Next in power is the Sun, after whom comes a long procession

of star gods headed by the Morning-star. These star gods far outnumbered all other dieties. Finally there is the Moon, the special diety of women. Of the gods below the Water goddess and Mother-earth are the leaders. Offerings and prayers are also made to animals, especially those with magic power who are guardians of the medicine men. The religious system of the Wichita may be called a star cult, much like that of the Pawnee but less elaborate.

There were ceremonies performed by the various societies. The Deer dance was the most important. Other dances were held to bring good crops and hunting, to obtain magic power and good luck in war. There were four dances for women in connection with the return of successful war parties. Besides these ceremonies there were prayers and offerings made to the various gods by individuals in connection with every activity. The Ghost Dance of the nineties took strong hold on the Wichita. Today the peyote cult has considerable following.

DWELLINGS AND VILLAGES. There were two types of houses. During the buffalo hunt the ordinary hide tipi of the Plains tribes was used, the three-pole foundation being favored. (See leaflet 19.) The other type was the bee-hive shaped grass lodge, occupied by several families, which was peculiar to these people and to the related Caddo confederacy. Eight to sixteen posts 12 to 15 feet high were set in a circle 15 to 30 feet across. Their tops were connected with cross pieces. Around this frame and several feet outside it was set a circle of long slender poles. The tops were tied together and the individual poles were tied to the cross pieces of the frame. Horizontal rows of long willow rods were tied around the poles. To this frame was tied a thatch of bundles of long coarse grass. Additional horizontal poles were tied on top of the thatch to hold it in place. A smoke hole was left open east of the peak. On top of the house was a peak of grass surrounded by the tips of four wall poles pointing in the four directions. The houses were about 25 feet high. Long ago there were four doors, those at the north and south being for ceremonial use. In more recent times there are only east and west openings, which are closed by movable, unattached panels of rods and grass.

Inside there was a central fire pit. Platforms for sleeping and storage ran around the walls. On them were reed mats and buffalo robes. Each bed had hide curtains.

As many as 70 to 80 of these houses might be in a village. Besides the houses there were summer shelters and drying frames. Fluctuations in war and the food supply often caused the moving of the villages. The old houses were abandoned and new ones made as needed. Around the villages were many acres of fields and gardens.

FOOD. Meat was obtained from the buffalo and other animals. It was eaten fresh or dried for storage. From their fields the people obtained corn, squash, melons, beans, peas and perhaps other vegetables. No doubt they also gathered wild crops of fruits, nuts, berries and seeds. Corn was ground in a log mortar with a long heavy wood pestle or on stone metates. Pumpkins and similar vegetables were cut into long strips for drying. Tobacco was cultivated.

CLOTHING. Before white influence made itself felt clothing was very scanty. The men wore a breech cloth and moccasins and the women a knee-length hide skirt and moccasin leggings covering the calf. The men wore leggings on occasion. The skin shirt was not made. For warmth the buffalo robe was used by both sexes. This costume vanished long ago. Today the clothing of the whites is generally used. The men wore many metal pendants hanging from four holes pierced through the lobe of the ear.

TATTOOING was very extensively practised by the tribe. In the sign language the gesture for Wichita is based on their fondness for tattooing. The men were marked about the eyes and mouth, on the backs of the hands, along the arms and

across the chest. The women's designs were on the nose, mouth and jaw, around the neck, down the arms and on and around the breasts. The men's designs were star symbols and the whole design on the women was taken from the buffalo. The women were tattooed to distinguish them from their slaves and from the women of other tribes.

WAR. While small in number and generally peaceful the Wichita were courageous and successful fighters. War parties set out to win glory by counting coups or taking scalps, or to steal women for slaves. The Apache, Osage and Tonkawa, in the order named, were their worst enemies. There is no record of distinctive weapons or tactics. Bows and arrows, knives, clubs, shields, etc., must have been used. Horses and mules were obtained very early and made the long raids against the Apache possible.

ARTS AND CRAFTS. Pottery was once extensively made, but no information is available as to its appearance. Basketry is mentioned but again data is lacking. Bowls and other utensils were made of wood, and horns were shaped into spoons. The culture of the prehistoric Caddo tribes described in reference 10 is possibly something like that of the early Wichita. Hide dressing was of the ordinary Plains type. Beading was done, small, isolated designs with white edging being used.

GAMES. Archery, double-ball, hoop-and-pole, shinny and racing games were active sports. Dice and guessing games were played. Stilts and swings were used. All games were played in a ceremonial manner.

CHARACTER. The morality of the Wichita is very high. Their life was well regulated and they fought but little with other tribes. Towards the whites they have been uniformly friendly. No other tribe is said to have surpassed them in this respect.

CUSTOMS. Children were born in the lodge. The husband stayed away for four days. The child was at once washed in the river. Its cradle was made by a woman of exceptionally good health. A name was often chosen for the child before its birth. If this was not done the child was not named until it had done something to suggest a name. If it was sickly the name might often be changed. Marriages were arranged by relatives. The girls were married at about 16, the boys when able to provide for a family. A girl's parents could break up a marriage if the husband was not to their liking. The dead were dressed and painted and kept at home until a grave had been dug on a nearby hill. The body and all war equipment but the shield were placed in the grave by someone chosen to carry out the rite. This person was customarily adopted by the family of the deceased after the funeral. The body was laid at full length, with the head to the east. The soul was believed to go to Spirit-land, where the old life was lived in all its perfection. Mourning on the part of the entire village lasted but four days. It ended with a ceremony in the mourners lodge.

MYTHOLOGY. The myths of the Wichita tell of the creation of the world and its peoples, their growing wickedness and destruction by a flood, the re-peopling by two survivors, and finally of the end of the world, which will be followed by a new creation.

Compiled from the following sources by F. H. Douglas.

CARNEGIE INSTITUTION OF WASHINGTON

1. Mythology of the Wichita—Dorsey. Publication 21, 1904.

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2. Articles on Wichita, Waco, Tawakoni and Kichai, by Mooney, Bolton and Fletcher. Article on the Grass House by Fletcher. Handbook of American Indians, Bulletin 30.
3. Villages of the Caddoan Tribes West of the Mississippi—Bushnell. Bulletin 77.
4. Burials of the Caddoan Tribes West of the Mississippi—Bushnell. Bulletin 83.
5. Games of the American Indians—Culin. 24th Annual Report, 1902-3.
6. The Ghost Dance Religion—Mooney. 14th Annual Report. Part 2, 1896.

AMERICAN ANTIQUARIAN MAGAZINE

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9. Wichita Tales—Dorsey. Vol. 15, p. 215; Vol. 16, p. 160; Vol. 17, p. 153; Vol. 21, p. 127.

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10. Certain Caddo Sites in Arkansas—Harrington. Indian Notes and Monographs, No. 10, 1920.

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11. Indian Homes—Madison.

Pictures 2, 3, 5, 11; history, 2; houses, 2, 3; tribal customs, 1; food, clothing, crafts, 2; myths, religion, 1, 10.

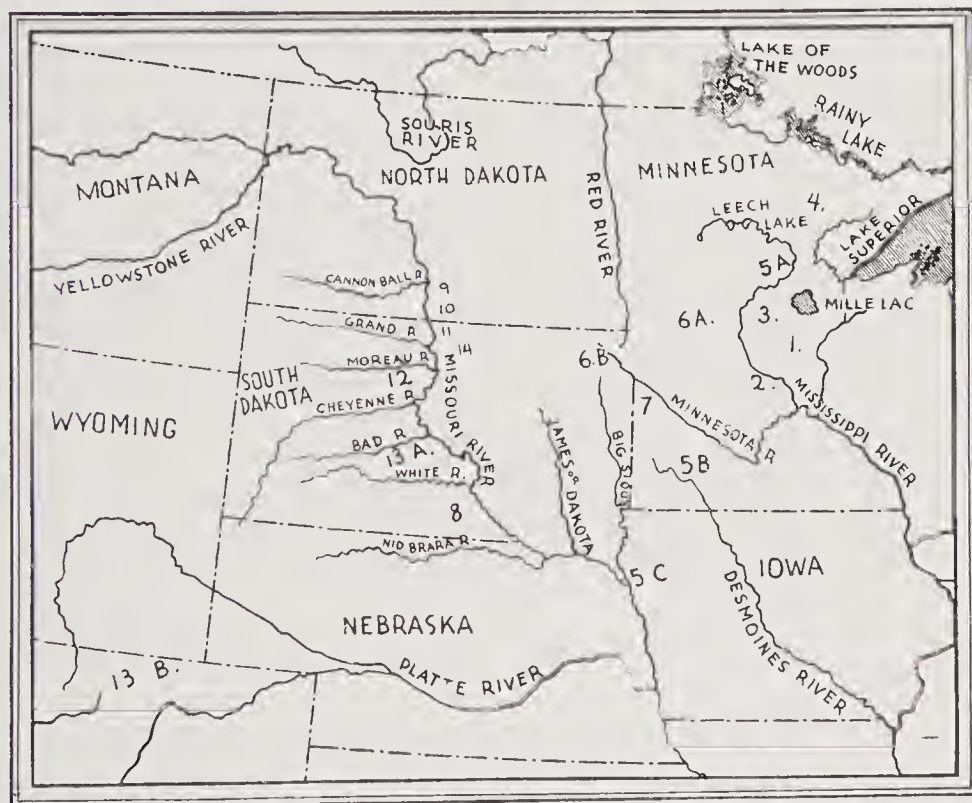
DENVER ART MUSEUM

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NORMAN FEDER - Curator



THE SIOUX TERRITORY

The numbers indicate the focal points of each group. Their range was not restricted to these points, but extended far and wide over the Plains area.

Leaflet No. 41 - February, 1932

Second Printing, March, 1934

THE SIOUX OR DAKOTA NATION

DIVISIONS, HISTORY AND NUMBERS

Reprinted July 1967

SIoux (Soo). This word is an abbreviation of the name Nadowessioux, which is a French corruption of the Ojibwa, or Chippewa, expression Nadowe-siw-eg, meaning "the snake-like ones" or "enemies". Sioux, the final form of this long Algonkin word, was first used, at least by scientists, in 1836.

DAKOTA is the name used by this nation for themselves. It means "friends" or "allies". There are several dialectic variations of the name, which will be mentioned below.

HISTORY. The Sioux were first mentioned by the whites in about 1640. They were then living a semi-sedentary agricultural life in the country northwest of the Great Lakes. Their neighbors, the Ojibwa, were always at war with them, and on being given firearms by the French, drove the Sioux toward the southwest and into a roaming, hunting existence. By 1750 the western bands had begun to cross the Upper Missouri and to filter into the Black Hills. Until after the war of 1812 the nation was an ally of the English. Beginning in 1815 a series of treaties were made which sought to move the Indians further west and to confine them on reservations. In 1862 the bands in Minnesota had a desperate war with the whites, and in 1876 there was trouble farther west. The so-called Custer massacre came at this time. In the early nineties came the last outbreak in connection with the rise of the Ghost Dance religion. Since the end of this trouble the people have been at peace.

POPULATION. Mooney's estimate for the Sioux in 1780 is 25,000 and for 1907 it is 28,000. The 1931 Indian Bureau census gives 33,168. From this it is evident that the nation is steadily gaining in numbers, being now the second largest tribe. The whole nation was about 60 per cent full blood in 1910.

PRONUNCIATION. In Sioux the letter "n" after a vowel is nasal, as in French. If this fact is remembered when pronouncing the following names a fairly close approximation of the Indian speech may be obtained.

NATIONAL DIVISIONS. The Sioux nation is divided into seven tribes, each one of which has several divisions. The remainder of this paper will be devoted to a listing and discussion of these tribes and the Teton bands. A description of the obscure bands of the other divisions is beyond the scope of this leaflet.

EASTERN DIVISION: SANTEE, ISSATI OR ISANYATI

1. MDEWAKANTON (Mdáy-wah-kan-ton) "mystery lake village." These people were apparently the first to be discovered. They were then living on and around Mille Lac and the headwaters of the Mississippi in Minnesota. They were more closely associated with the whites than the other tribes. They took an active part in the fighting in 1862. After peace came the people were put on the Crow Creek reservation near Pierre, South Dakota, and moved in 1866 to the Niobrara or Santee reservation in northeastern Nebraska. In 1876 some went to Flandreau in eastern South Dakota. After the reservation days began the tribe was kept with the Wahpekute, so exact census figures are not available. The combined body today numbers 1,610, an increase over past years. In 1804 the Mdewakanton were estimated at 1,200.

2. WAHPEKUTE (Wakh-páy-koo-tay) "shooters among the leaves (of deciduous trees)." This tribe was very closely connected with the preceding until about 1850, when a portion of them split off. This tribe is known in history for its troublesome disposition. Their history since the sixties is tied up with that of the Mdewakanton. The Wahpekute was the smallest of the tribes. It was estimated in 1824 as having 800 members.

3. WAHPETON (Wakh-páy-ton) "village among the leaves (of deciduous trees)." Like all the members of the eastern division this branch was first found in the Minnesota lake region and moved gradually westward. In the fifties they were living around Lac qui Parle in southwestern Minnesota. Some years later they were united with the Sisseton on the Lake Traverse reservation in northeastern South Dakota and on the Devil's Lake reservation in east central North Dakota. The 1835 population was estimated at 1,500. Later census figures are not available, as they are only given for the combined Wahpeton and Sisseton. In 1931 these two mustered 3,600, a gain over previous years.

4. SISSETON (Sis-see-ton) "lake village." The history of these people is very much like that of the preceding tribes. They were found in the Minnesota lake country, gradually moved westward, and were settled on reservations in the sixties. They have long been combined with the Wahpeton, hence no separate census figures can be given. The tribe seems to have numbered about 1,000 in pre-reservation days.

DIALECT. These four bands speak dialects which are very similar. The tribal name among them is Dakota and the letter "d" takes the place of "l" among the Teton and "n" among the Yankton.

MIDDLE DIVISION

5. YANKTON (Ee-ángk-ton) "end village." These people were first found in 1683 in the region of Leech Lake in north central Minnesota. A southwestern movement must have begun soon afterwards, because in 1708 the tribe was near what is now Sioux City, Iowa. One hundred years later they were still in that neighborhood, but thereafter roamed restlessly over southeastern South Dakota and nearby parts of Iowa and Minnesota. They kept out of the 1862 fighting and warned many whites of the coming trouble. They have lived at peace on their present reservation in South Dakota since 1858. Early census estimates vary widely, but the impression is gained that this branch has numbered about 2,000 for a good many years. The 1931 census shows 2,038.

6. YANKTONAI (Ee-ángk-ton-eye) "little end village." In the migration from the Minnesota lakes this tribe did not turn as far south as the closely related Yankton, who are said to have split off from the Yanktonai. Until the sixties, when reservation life began, the tribe roamed through the northeastern section of South Dakota. They were not in the 1862 fighting. The Upper Yanktonai are now on the Standing Rock and Devil's Lake reservations, and the Lower branch, or Hunkpatina, are mostly on the Crow Creek reservation. A few are at Standing Rock and Fort Peck, Montana. Owing to the long mixing of the tribes census figures are very vague. A continuous population of about 5,000 is probably fairly close.

TRIBAL NAME. In this division the name is Nakota.

WESTERN, OR PRAIRIE DIVISION

7. TETON (Tee-ton) "dwellers on the prairie." This great division was first met by Hennepin in 1680 on the Mississippi River in central Minnesota. By 1700 at least some of them had wandered westward to the Lake Traverse region in northeastern South Dakota. By 1800 the various bands were scattered along the Missouri in South Dakota. As white pressure increased they fought strenuously for their rights, taking an active part in the Indian wars of 1864, 1876 and 1890. Their incessant raids carried them far and wide over the western plains from Colorado along the Rockies up into Canada. They were the Plains Indian who most impressed their contemporaries, and from them have come most

of the ideas about the Indians in common circulation. They are divided into several bands, which are listed below.

TRIBAL NAME. Among the Teton the name is Lakota.

8. BRULE OR SITCHANXU (Si-tcháng-hu) "burned thighs." This band lived in south central South Dakota and northern Nebraska, between the White and Niobrara Rivers. Though closest to the emigrant trails the band was not troublesome. But on the other hand they suffered more from introduced disease. In 1890, the last year they were numbered separately, there were about 4,300. They are now on the Rosebud, Lower Brule and Crow Creek reservations.

9. SANS ARCS OR ITAZIPCHO (Ee-táh-zip-chó) "without bows." This band, which is not mentioned by the early writers, shared the north central part of South Dakota with the Sihasapa and Hunkpapa bands, living mostly west of the Missouri. They have not been counted separately for many years. The last available figure is 222.

10. SIHASAPA or BLACKFEET (See-háh-sáh-pah). This band must not be confused with the Algonkin Siksika or Blackfoot described in leaflets 37-8. The band does not appear in the early accounts. Not until 1856 was anything written about them. They ranged west of the Missouri in southern North Dakota and northern South Dakota. They were very warlike. The last available count gives about 500 for the population. They now live on the Cheyenne River and Standing Rock reservations.

11. MINICONJOU (Mnee-kó-jou) "those who plant beside the stream." Lewis and Clark in 1804 make the first mention of this band, which then and until reservation days lived in north central South Dakota west of the Missouri. They were called the most unruly and troublesome of all the Teton. The last separate census figures, made in 1888, give them a population of about 1,300. They now live on the Cheyenne River reservation in central South Dakota.

12. TWO KETTLES OR OOHENONPAH (O-o-hay-non-pah) "two boilings." 1846 is the date of the earliest mention of these people. They seem to have kept to themselves in a region bounded by the Cheyenne, Moreau and Missouri Rivers in central South Dakota. They were not troublesome and were uniformly on good terms with the whites. The 1910 census lists about 300 of them on the Cheyenne River reservation.

13. OGLALA (O-gláh-lah) "to scatter one's own." This is the largest band of the Teton division. Before 1850 they ranged along the Bad River in central South Dakota, but after that they moved to the country between the two branches of the Platte River in Nebraska and westward. Until the end of the Indian wars they were incessantly on the warpath, fighting white and Indian alike under Crazy Horse, Red Cloud and other famous chiefs. They were very prominent at the Custer fight. They now live on the Pine Ridge reservation in southwestern South Dakota. The 1931 census give 8,100 for the band.

14. HUNKPAPA (Húng-kpah-pah) "end of the circle." No mention of this band appears before about 1825. They ranged west of the Missouri in north central South Dakota. They were extremely warlike and were the last of the Sioux to take up the reservation life. They now live on the Standing Rock reservation. The band numbered about 1,100 in 1910.

Compiled from the following sources by F. H. Douglas:

BUREAU OF AMERICAN ETHNOLOGY.

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2. Siouan Sociology—McGee. 15th Annual Report.
3. Articles under the various headings in the Handbook of American Indians. Bulletin 30.

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4. Aboriginal Population of America—Mooney. Miscellaneous Collections, Vol. 80, No. 7.

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5. Indian Population in the United States, 1910.

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6. Annual Report for 1931.

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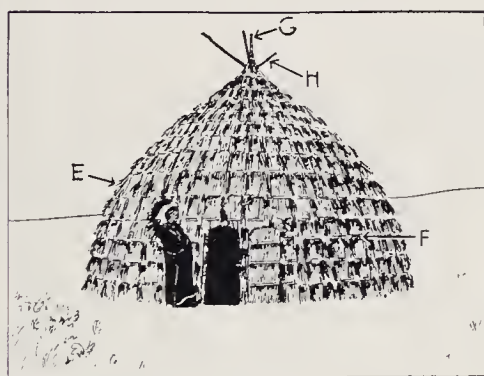
7. The Aborigines of Minnesota—Winchell.

DENVER ART MUSEUM

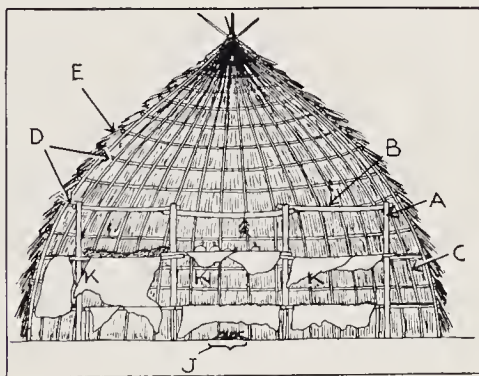
DENVER, COLORADO

Department of Indian Art

RICHARD G. CONN, CURATOR



EXTERIOR



INTERIOR

(Cleveland Museum of Natural History)

Leaflet No. 42 - February 1932

3rd Printing, June 1957

THE GRASS HOUSE OF THE WICHITA AND CADDO

GRASS HOUSES were used by the southern branches of the Caddoan linguistic stock, that is, the Wichita and Caddo groups, and a long list of now vanished tribes once living in Arkansas, western Louisiana and eastern Texas. About 1,350 Indians, the remnants of many of these tribes, are now living in western Oklahoma. They were still using the grass house 25 years ago, but information is lacking as to whether any are now used.

The exact extent of the grass house in very early times cannot definitely be stated. In the north of the area it was certainly in use in 1541, when Coronado reached the Wichita on his search for gold. Descriptions of the houses found in the expedition's records might well have been applied to those of the 19th century. For the south there is the description of Joutel, one of La Salle's men, who reached the Caddo country after the murder of his master in 1687. His narrative gives a very full and clear account of the grass houses, their construction and contents.

For further information about the Wichita group see leaflet 40. For a list of all the Caddoan tribes see page 183, volume 1, of the Handbook of American Indians, Bulletin 30 of the Bureau of Ethnology.

FRAMEWORK

HEAVY BEAMS. A circle from 15 to 40 feet in diameter was drawn on the ground. Around its circumference were set up from 8 to 16 forked top logs 12 to 15 feet high (A). These logs were usually cedar. Other logs (B) were laid across the tops of these uprights and were firmly tied in place with slippery elm bark ropes.

WALL RIBS. Another circle was drawn on the ground outside of the main beams, about 4 feet from their bases. On this outer circle were set from 50 to 75 long, slender cedar poles (C), which leaned inwards and rested on the transverse beams of the main framework, to which they were tied. The tops of these poles were tightly fastened together.

Rows of slim peeled willow rods (D) were next tied to these ribs at right angles to them. These horizontal ribs were about 2 feet apart. They were fastened in place with elm bark cord.

THATCHING. Bunches of long, coarse grass (E) were tied to the horizontal ribs in a series of overlapping layers, the work beginning at the bottom of the structure.

When this thatch was in place a second series of horizontal ribs (F) was put in place on top of the thatch, to keep it firmly in place. At each crossing of the horizontal and vertical ribs an ornamental tuft of grass was tied, the line of tufts following the invisible upright ribs.

PEAK. At the top of this cone-shaped structure a sharp peak (G) of tightly bound grass bundles was set up. It was about 3 feet high. At the base of this peak short poles (H) projected to the four points of the compass. The peak was 15 to 25 feet above ground.

ENTRANCES were formerly four in number, facing the compass points. They were about 2 feet wide and 3½ to 5 feet high. Two of them, those to the north and south, were only used during certain ceremonies. But in more recent years only the eastern and western ones have been made. The south entrance seems to have lasted longer than the north. The east entry is used in the morning and the west in the afternoon. These openings were closed with panels made by tying bunches of grass to willow

frames. They were not hinged, but were set to one side either within or outside the building.

SMOKEHOLE. The smoke from the central fireplace escaped through a small hole in the roof a little to the east of the peak.

SYMBOLISM. The four projecting beams at the peak were symbolic of the compass points, where were the paths down which the gods came to help man. The peak typified the heavenly home of the mysterious force which filled all nature.

INTERIOR ARRANGEMENTS

FIREPLACE. In the middle of the floor a shallow excavation was made for the fire (J). A 17th century account says that the fire was not allowed to go out, being made of large trees which were constantly pushed into the firepit as they burned away. Anyone who came in the building took care of it. The fireplace was considered to be extremely sacred, and was treated with great reverence by all.

BEDS. Around the walls and between the large upright posts were a series of beds (K). These were platforms, 3 or 4 feet wide, and 2 to 3 feet from the ground, made of cane in the southern parts of the area and of willow rods in the north. On them were placed rush mats, dressed skins and buffalo robes. Upper berths were often constructed for sleeping places or for storage. The spaces between the lower berths were also used for storage. There were six beds in most houses, but twelve or more might be found.

Each berth, or pair of berths, was provided with skin curtains which could cut it off from the rest of the room. These curtains were often painted with war scenes.

CORN MORTAR. Halfway between the fireplace and the western door stood the family corn mill. This was a section of log, a foot and a half in diameter and four feet long, firmly implanted in the ground. In the upper end a deep hollow was dug out. In this hollow the corn was reduced to meal by pounding it with long, heavy wooden pestles. Usually several women pounded together.

NUMBER OF OCCUPANTS. Though small houses of this type were made for single families, most of them were occupied by several groups, as many as a dozen being mentioned for the large houses found by the French. The fire was common to all, but each family was assigned to several of the berths, mat partitions being hung between the several sections. On and under the berths and on the beams above were stored the mats, clothing, tools, weapons and the pottery, basketry and wooden utensils of the family.

VILLAGES. As these tribes were agriculturalists they located their villages on sites near land suitable for farming. As many as 70 or 80 houses were grouped fairly close together in favorable localities, such as the lower slopes of well-watered valleys. All around were the fields. These villages were permanent. If for any reason it became necessary to abandon them they were burned. The presence in the tribe of an official appointed to pick new sites indicates that such removals did come about. When the tribes went on buffalo hunts they lived in skin tipis like those used by the Plains tribes. See leaflet 19.

FORTIFICATIONS. In reference 4 there is an account of the method of fortifying the houses. In localities where attacks from hostile tribes were to be feared the floors were excavated to a depth of 2 feet and 3-foot earthworks were thrown up around the outside of the house, thus making a 5-foot embankment behind which the villagers could fight. The thick grass walls were impenetrable by arrows. As a precaution against fire-arrows the grass thatch was well dampened. As these villages had no place in which to gather horses in the event of an attack this process of fortifying the houses died out when horses and firearms became widespread.

OTHER STRUCTURES

WORK ARBOR. Near each house, unless the owners were very poor, was built an arbor in general construction much like the house, but of different shape. These arbors were rectangular and but 8 or 10 feet high. The thatch covered the roof, but failed by 4 feet of reaching the ground. Inside was a low platform on which the Indians worked and rested during the heat of the summer.

A smaller arbor was long ago used as a sleeping place for the young girls of the tribe.

DRYING FRAME. A platform of poles was made, perhaps 10 by 20 feet, and far enough above the ground to necessitate the use of a ladder made of a single notched log. Corn, meat and skins were laid on this platform to dry and from it were hung drying pumpkin strips.

SWEAT HOUSE. This low domed hut of logs and earth or mats was used for the sweat bath so common among the Plains and many other tribes.

Compiled from the following sources by F. H. Douglas:

BUREAU OF AMERICAN ETHNOLOGY.

1. Article on the Grass House—Fletcher. Page 505, Vol. 1, of the Handbook of American Indians, Bulletin 30.
2. Article on the Caddoan Stock—Fletcher. Page 182, Vol. 1, of the Handbook of American Indians, Bulletin.
3. Villages of the Caddoan Tribes West of the Mississippi—Bushnell. Bulletin 77, pages 179-183.

SMITHSONIAN INSTITUTION.

4. Indian Forts and Dwellings—Doyle. Annual Report 1876, page 460.

CARNEGIE INSTITUTION OF WASHINGTON.

5. The Mythology of the Wichita—Dorsey. Publication 21, pages 4-7.

CLEVELAND MUSEUM OF NATURAL HISTORY, CLEVELAND, OHIO.

6. Indian Homes—Madison. Pages 20-21.

Pictures 1, 3, 6; accounts of early explorers, 3; general description of the Wichita, 5; descriptions of grass houses, 1, 5, 6.

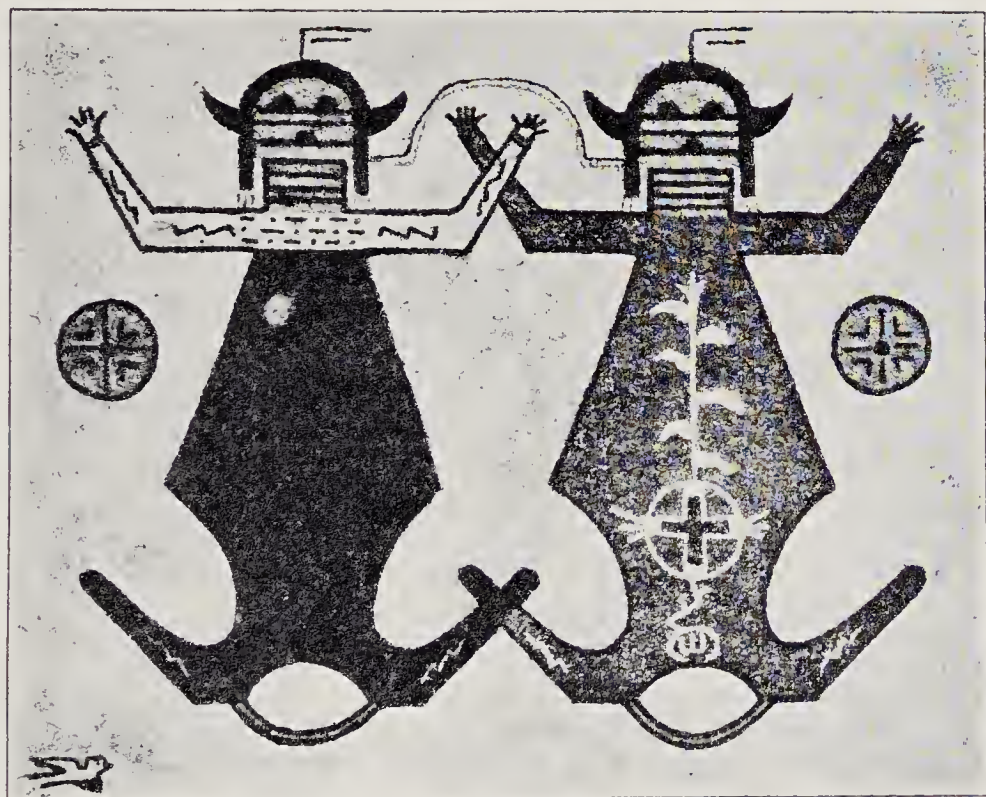
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Department of Indian Art

RICHARD G. CONN, CURATOR

FREDERIC H. DOUGLAS, EDITOR



FATHER SKY AND MOTHER EARTH
NAVAHO SAND-PAINTING

From a replica executed in varnished sand by Red Robin
at the Denver Art Museum.

Leaflets 43 and 44 - March, 1932

7th Printing, June 1957

INDIAN SAND-PAINTING
TRIBES, TECHNICS AND USES

SAND-PAINTING. This term has many synonyms. Dry-paintings, ground-paintings, sand altars, sand mosaics, earth pictures and mosaics, are some of the many names given to this art. While all of them have points in favor of their use, in this paper "sand-painting" will be used, as being the most common expression.

ORIGIN. The beginnings and early development of sand-painting are unknown. Not until about 60 years ago was the existence of this art known to the world. The discoverer of the Navaho pictures was the late Dr. Washington Matthews, whose descriptions are still a main source of information. The widely scattered locations of this art, the existence of similar pictures among the Japanese and Hindus, and the common Asiatic origin of the Indian perhaps indicate the invention of sand-painting somewhere in Asia. In the case of the Navaho, the leading producers of these paintings, we find some authorities thinking that this tribe is of quite recent appearance in their present home and that sand-painting was learned by the tribe from the Pueblo peoples, who in turn are believed to have received most of the elements of their culture from the great civilized centers of Mexico. Other investigators, taking their stand on the legends of the Navaho, say that these people invented the process themselves centuries ago. Owing to the extremely ephemeral character of the pictures and the secrecy with which they have been surrounded the question of their origin will probably never be answered.

Cushing says that among the Zuñi the pictures on the floors of the kivas are connected with the lower regions, and that those which are related to the compass points are painted on the walls. He suggests that the reason for the great development in the size and intricacy of the Navaho pictures is that because of the impossibility of making pictures on the rough log walls of the medicine lodges it was necessary to combine the wall and floor pictures.

PRESENT CONDITION. Available information indicates that sand-painting is done today by all the tribes mentioned, except those in California, where the art came to an end about 1890. Perhaps a few very old men remember the process.

NAVAHO

MYTHOLOGY. The gods were the first makers of the pictures now made in sand. In some of the stories the pictures were embroidered on cloth. They were called *naska*, "a sewing." In other stories the gods made the pictures on black clouds spread on the floor. They realized that the people could not do this and ordered the use of sand. In one story the Eagle is said to have taught man how to make sand-paintings. The legend says they were made on sand so that no outsiders could steal them, and to prevent fights within the tribe.

PURPOSE. The Navaho name, *eek-ha*, meaning "the entry" or "the gods enter and go," indicates the idea behind the making of the pictures. Through them the gods enter the bodies of those whose cure is sought in the religious ceremonies in which the paintings are used.

MEDICINE LODGE. All, or the very large majority, of the sand-paintings are made in this ceremonial building. It is a structure of logs and earth built in much the same way as is the hogan, or dwelling house described in leaflet 9. The principal difference lies in the greater size of the medicine lodge, which must be large enough to accommodate a considerable number of persons besides the sometimes very large sand-paintings. Diameters as great as fifty feet are attained, though smaller sizes are more usual. The single door faces east.

COLORS. Five colors only are mentioned in the older accounts; white,

red and yellow, made from groundup sandstone; black, made from powdered charcoal mixed with a little sandstone to give it weight; and blue, really a gray made by mixing black and white. Reports of present day practices list other raw materials and colors. White is from gypsum; red and yellow are ochres. A brown is now used and a sparkling pink made by mixing red, white and some shiny mineral, probably mica or hematite. Matthews mentions the very rare use of powdered turquoise, malachite or indigo for very specially important bits of the pattern. When the locale of a ceremony is announced the raw materials for the colors are transported there, if they are not to be found in the neighborhood. Assistants of the shaman or medicine-man crush them into fine powder between stones such as are used for grinding corn. Supplies of prepared color are placed in small bark trays and cloth bags.

COLOR SYMBOLISM. With some exceptions the five colors are connected with the points of the compass as follows: white, east; blue, south; yellow, west; black, north. Red is the color symbol for sunshine. Black is male and blue female. The east and north sometimes exchange colors.

WORKERS. The older accounts say that the sand-paintings were made by young men who had passed through certain preliminary initiation rites, but who were neither medicine-men nor even candidates for this office. A very recent book says that anyone, of either sex, who happens to be present may assist in the work. If this be true it is certainly a modern innovation. In every case the pictures are made under the watchful eye of the shaman. Small pictures accompanying minor ceremonies may be made by the shaman himself. Women may be shamans.

PROCEDURE. Clean, yellow-white sand is carried into the medicine lodge in blankets and spread over the floor in an even layer from 1 to 3 inches thick. The layer is smoothed with the long, sword-like batten sticks used in weaving. Sometimes only enough sand is spread for the start of the picture, the rest being added as needed. This background is placed as near to the west side of the lodge as is possible.

The picture is begun as near the center as the design will permit, the worker constantly backing away from the completed portions. The design proceeds in accordance with the order of precedence of the compass points: east, south, west, north. If the figures all run in one direction the heads are to the east. The worker crouches on his heels with his bark trays of color nearby. He picks up a little color between his first and second fingers and opposed thumb and allows it to trickle out as he moves his hand along. Loose particles are blown off before the trickling begins. If a mistake is made it is covered with background sand and the design redrawn. The drawing is not entirely freehand, long lines being drawn with the aid of tightly stretched string, and spacing measured off with the palms and other parts of the hand and arm. After the design is finished the shaman sprinkles pollen on various parts of it and sets up plumed sticks around the edge, in cases where the rite requires this.

As the pictures must be destroyed the same day that they are made, the work usually begins in the morning. Some of the big pictures require hours of work by as many as a dozen workers.

In the ceremonies the patient usually sits down in the middle of the picture, which disturbs it to some extent. Further destruction is wrought by the application of pinches of the design to various parts of the patient's person. When the ceremony is ended all persons in the medicine lodge are permitted to help themselves to small pinches of the col-

ored sand from the painting. This is for healing and to be used in fetish bags. Any sick people in the assembly are allowed to apply sand from the pictures to their persons. For example, someone with a headache will moisten his palm, lay it on the head of one of the figures, and apply the sand adhering to his palm to his own head. When all this is over the shaman obliterates the picture, the process varying with the different ceremonies. After the final destruction the sand is gathered up in blankets and carried out of the lodge to be deposited somewhere nearby to the west of the lodge.

SUBJECT MATTER. The pictures represent, in conventionalized form, the figures of male and female gods, divine ceremonies, lightning, stars, sunbeams, rainbows, mountains, animals, plants and other objects having a mythical or traditional significance. The bodies of the dieties are extremely long and slim, with round or square masked heads and very abbreviated arms and legs. True symbolism is found in these pictures to the highest degree, this art being one of the outstanding examples of this type of expression among the Indians.

The individual elements and the complete compositions are theoretically drawn in accordance with unvarying rules. Only in a very few cases are variations allowed. The notable exceptions are the pouches of the divine beings, which can be made to suit the fancy of the artists. But there really is a certain amount of variation in the pictures because of the fact that no models or guides exist, the extremely elaborate intricacies of the designs being carried in the minds of the shamans from winter to winter. Besides these small individual variations there are those which are due to the fact that in the vast Navaho reservation there are local customs and practices. So not only does the shaman in New Mexico unknowingly allow little changes in the pictures made from year to year in his territory, but he also makes them on a slightly different general plan than does his fellow practitioner over the mountains in Arizona. But the differences in either case are extremely slight. No pictures are made in the summer. Matthews reported that the water color sketches which he was allowed to make were carefully studied by the workers to refresh their memories.

NUMBER AND SIZE. It is known that there are 166 pictures made in connection with the 17 major ceremonies of the Navaho, there being from 4 to 16 paintings for each ceremony. How many more there are is not known, though a guess of perhaps 400 has been made by an investigator working today. Over 100 have been carefully copied by white students of the art. A large number of exact replicas have been executed by medicine-men on the walls of the Fred Harvey "El Navaho" hotel in Gallup, New Mexico.

The pictures are square, rectangular and round. The latter range in diameter from perhaps 3 to 20 feet and the former show the same relative range in size. Jeancon watched the making of one 20 by 32 feet.

SWEAT LODGE PAINTINGS. The picture of a rainbow, with conventionalized human head, hands and feet, is drawn on the roof of the low domed sweat houses.

APACHE

BANDS. Sand-paintings have been reported from the several bands living on the adjoining San Carlos and White Mountain reservations in east central Arizona, and from the Jicarilla in north central New Mexico. For further information about this tribe see Leaflets 16 and 64.

PURPOSE. Like the pictures of the Navaho those of the Apache are made in connection with the curing activities of the medicine-men.

CHARACTER. Among the Apache sand-paintings are called medicine disks. They are made both outdoors in canvas or brush encircled areas and in medicine lodges. The pictures are made in connection with the ceremony which is the last resort of the medicine-men. If every other means of healing fails the medicine disk is made, for even if the patient does die, the use of the disk insures a pleasant life in the hereafter.

Th pictures consist of a series of concentric circles in red, black or white, bearing pictures of gods in human shape, heavenly phenomena, water, mountains, frogs, snakes, and various birds and animals. White limestone, red sandstone, black charcoal, yellow ochre, green powdered leaves and gray or blue made by mixing white or black, are the colors used. The pictures are from 10 to 18 feet in diameter.

As among the Navaho the sand-paintings must be made and destroyed in a single day. The picture is partially destroyed by the medicine-man in the course of the ceremony. He moistens his palms, lays them on the designs, and rubs the adhering sand on various parts of the patient's body. Pinches of the sand are also preserved for future use. When the ceremony is ended the picture is totally destroyed by the medicine-man. Ceremonies may also be conducted by women.

PUEBLO

HOPI. It is impossible to state how many of the ceremonies of the Hopi include the making of sand-painting in their rituals. Religious rites of some kind are going on the year round among these people and many of them have never been carefully investigated. There are also practices peculiar to each village, so that an account of a ceremony of a certain society at Walpi, for example, would not necessarily apply to the same ceremony of the Oraibi branch of the society. Hence the following list is very incomplete. Sand-paintings are made for the Snake and Antelope dances, for the Oaqol and Powamu ceremonies, for the woman's ceremonies called Lalakonta and Mamzrauti and for the Monkiva altar at Hano. The latter, however, is a Tewa village, though located on one of the Hopi mesas.

CHARACTER. The pictures are made in the underground rooms called kivas as part of the altars erected for the various ceremonies. The altars are groups of ceremonial objects such as wood or stone figures, painted wood backgrounds, prayer-sticks, fetishes, etc., erected on the kiva floors against one of the walls. The pictures are on the floor directly in front of the altars. They are rather small, squares, rectangles and sometimes circles from 2 to 4 feet in the greatest dimension being usual. The subjects of the pictures are clouds, rain, rainbows, lightning, snakes, various animals and representations of the masked figures called kachinas. The colors are connected with the points of the compass. Yellow, made from ochre or sandstone is north; green, made from copper carbonate, is west; red, made from sandstone, is south; white, made from gypsum, is east. Black powdered charcoal is also used. The background is sand of various shades. The pictures are made by the priests or priestesses of the societies. Unlike the Navaho, the Hopi do not have to destroy the pictures the day they are made.

ZUÑI. The above remarks about the Hopi sand-paintings apply very largely to those at Zuñi. Their full extent is not known. They are parts of altars in the kivas of the societies, their subjects are about the same as those of the Hopi, and they are not destroyed the day they are made.

OTHER PUEBLOS. Almost nothing is known about the extent or character of the art in the remaining pueblos. From the very scanty available data it would seem that in use and appearance the pictures are

quite similar to those of the Hopi, though perhaps less elaborate. They have been seen and quite carefully described at Sia and Jemez, and mention is made of them at Laguna, Isleta and Acoma. Mrs. Stevenson says that they were made at all the pueblos, but gives no supplementary information. Yet from other indications and studies of the relationship between those towns about which we know and those concerning which there is a lack of information it is altogether probable that her statement is correct. While progress may be made, the existence of a strong policy of secrecy on the part of the Indians, coupled with the slow dying of the old ceremonial life, makes the procuring of additional knowledge somewhat uncertain.

MEAL PAINTINGS are very widely distributed among the pueblos. Except for the material used in their construction they are identical with those made of colored earths. Mention is made of them at nearly every pueblo. Pollen is often used with the corn meal.

CALIFORNIA

TRIBES. Sand-paintings are known to have been made by the following tribes, which today are grouped under the general name of Southern Mission Indians: Luiseño, Juaneño, Gabrielino, Cupeño, Fernandeño and Cahuilla of the Shoshonean or Uto-Aztec linguistic stock; Diegueño, of the Yuman-Hokan stock. It is possible that the neighboring Chumash also made such pictures. These tribes lived along the coast from the Mexican border to somewhat north of Los Angeles. While a few thousands of these peoples have survived, their old native life has very largely vanished, so that but little information about their sand-paintings is available.

ORIGIN. It is unquestioned that there is a strong connection between the sand-painting of the California tribes and that of the Pueblos and Navaho. The original idea seems to have come to these tribes very long ago from the Southwest, but the final working out was purely Californian.

USE. The paintings are made in connection with the worship of the god Chungichnish, a powerful being whose cult centered among these tribes. A better known feature of this religion is the use of the narcotic Jimson-weed, *Datura meteloides*, known also by its Mexican name of toloache. The pictures are much cruder than those of the Navaho and are the work of the medicine-men.

DIEGUEÑO. In this tribe a sand-painting is made in connection with the boy's adolescence ceremony. The circular pictures, 15 to 18 feet in diameter, were made in the houses in which the ceremonial objects were preserved. They represented the universe of the tribe, all the familiar heavenly bodies and well known mountains, together with snakes and other creatures being placed within the circle. White powdered soapstone, red oxide of iron, black charcoal and colored seeds were used to make the picture. The significance of the picture was carefully explained to the boys in a long lecture on good conduct and then it was destroyed.

UISEÑO. Sand-paintings accompanied four ceremonies: the boy's and girl's adolescence rites, the ant ordeal—a supplement of the boy's ceremony—and the ceremony for burying the feathers of an initiate. The only available information is about the pictures made for the girl's and boy's ceremonies, the difference lying in the designs. The pictures ranged from 4 to 18 feet in diameter and like those of the Diegueño represented the world. But while the latter picture the actual tangible world, the Luiseño universe is one of abstract and mystic symbolism. The heavenly bodies and earthly creatures appearing in it are mere lumps of color

and not the fairly realistic pictures of the Diegueño. The colors were commonly red, black and white, though for the boy's picture yellow, green and blue are mentioned.

CUPEÑO. For the boy's and girl's initiations a 12-foot circle was made in white, red, black and yellow, the latter being some sort of seeds. Within this circle were gods and human figures.

CAHUILLA. The mountain division of this tribe made a picture for their boy's initiation ceremony. It was like a wheel with spokes and was made with red ochre or iron oxide, white clay and black graphite.

OTHER TRIBES. Nothing seems to be known about the pictures of the other tribes listed. But as they were of the same stock as the Luiseño and close neighbors it is presumed that their pictures were generally similar.

PLAINS TRIBES. The Cheyenne and Arapaho make earth pictures as part of the altar set up in the lodge in which the Sun-dance takes place. The Ponka make a picture in each of the four preparation tipis. The pictures show concentric circles, straight lines, dots, etc., in white, red, black and yellow and are usually made in a shallow excavation. The Blackfoot make small sand-paintings during the ceremonies accompanying the transfers and other uses of medicine bundles, pipes, etc. The name smudge altar is given to them. The pictures, from 12 to 30 inches square, are made on the floor of the tipi behind the central fire. White, yellow, red and black are arranged in simple patterns showing heavenly bodies, realistic figures, and various abstract designs having symbolic meanings. A definite ritual, including the singing of songs, is followed in making the pictures. On the smudge altars various plants are burned to produce a scented smoke. Mention is made of Dakota, or Sioux, sand-painting, but information is not at present available.

YUMA. In reference 13 there is an account of a sand-painting made by the Yuman tribes at the Camp Verde reservation in Arizona. But as careful investigators have found absolutely no traces of this art among the Yuman tribes the picture was undoubtedly made by Apaches on this reservation. The description of the picture bears out this idea.

Compiled by Jean Allard Jeancon and F. H. Douglas from the following sources:

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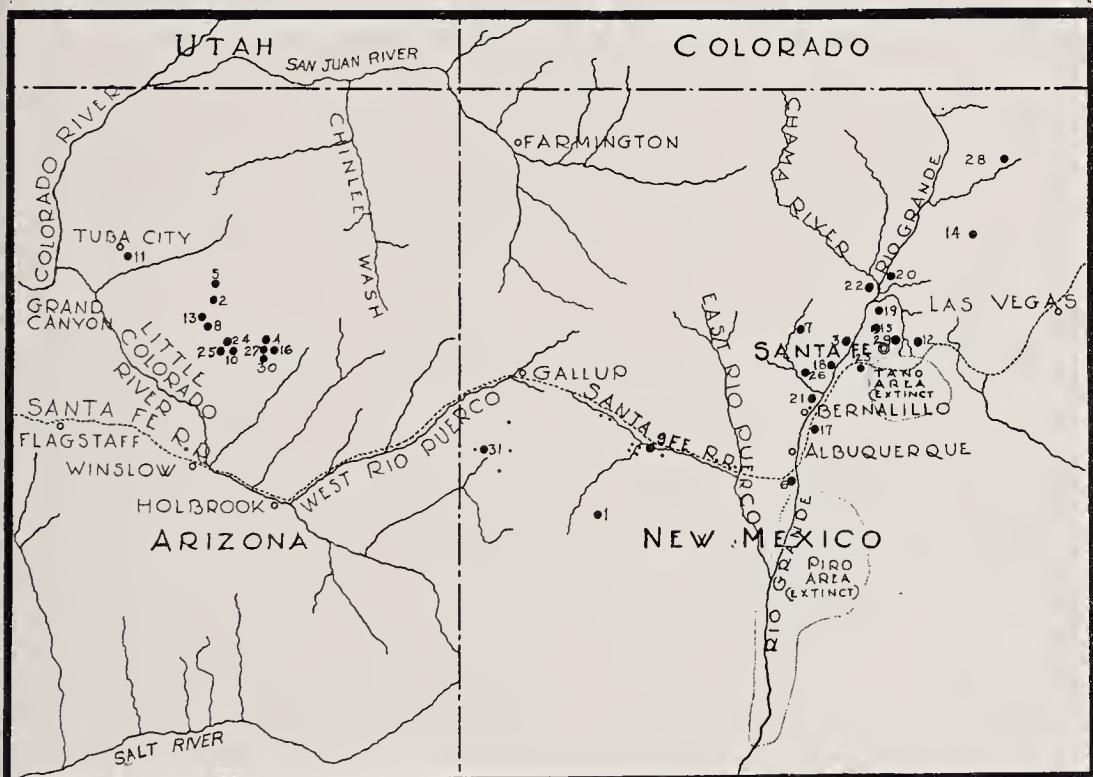
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MODERN PUEBLO INDIAN VILLAGES

PUEBLO. This word means "town" in Spanish. When the first Spanish explorers reached the ancestors of the Indians listed in this leaflet they found them living in permanent towns, which were at once called "pueblos". The word for the town has long been applied to all Indians who live in this manner, regardless of their tribe.

STOCKS. There are four linguistic stocks or families of Pueblo Indians; Shoshonean, Zuñian, Keresan and Tanoan. The latter has five divisions, Tewa (Tay-wah), Tigua or Tiwa (Tee-wah), Jemez (Hay-mes), Tano (Tah-no) and Piro (Pee-ro). The last two groups are nearly extinct. The survivors are discussed under the last heading of this leaflet. The name of the stock assigned to each town indicates the language spoken there. The people have intermingled so much through the centuries that each village is composed of persons who are to some extent the descendants of several stocks. No absolutely pure stock blood exists today.

NAMES. The names of the pueblo towns have been spelled in dozens of ways by the Spanish and American writers who have investigated them in the last 400 years. The spellings used in this leaflet are those approved by the Bureau of Ethnology in Washington. Most of the variations can be found under the names of the pueblos in the Handbook of American Indians, Bulletin 30 of the Bureau of Ethnology.

HISTORY. When the Spanish first explored the Southwest in the period 1540-1600 they found about 70 towns inhabited by Indians of the Pueblo type. Formerly there had been many more, but since the end of the 13th century their number had been diminishing, a great drought at the end of that century having forced the many little towns to consolidate into larger units near water. The arrival of the Spanish hastened this process of consolidation. In 1680 nearly all the pueblo towns revolted against Spanish rule. They were successful until 1692, when the land was reconquered, though local outbreaks went on until about 1700. This war reduced the number of villages to about 25. After the coming of the American and the gradual arrival of permanent peace, improved conditions for farming due to government irrigation projects, and the break down of the old life, the tendency to live in smaller communities began to reassert itself, so that today there are at least 44 communities besides many little locations, of from one to six families which have not been mentioned. Today couples setting up an establishment are more likely to build a single dwelling near their fields rather than to live in the old pueblo.

FOUNDING DATES. The statements in the following paragraphs that the existing towns were founded at such and such a date does not mean that all the present buildings were built at that date. Pueblos are constantly changing, old houses falling down and new ones being built. So the founding date must be considered to mean the date at which people began to live at the site of a town of today.

HOPÍ CENSUS. In 1930 a count of the Hopi villages was made which included persons from each town who were living elsewhere. Hence the figures are larger than those usually given. 1942 (official) census, 3444.

FIESTAS. In all except the Hopi towns there is now held one especially well-known fiesta, combining the Christian celebration of the saint's day, a native dance, and a fair for sale of goods.

ACOMA (1) (Ah-ko-mah). 20 miles southwest of the Laguna, New Mexico, station of the Santa Fe Railroad. The native name for the town is Ako, derived from Akome, "people of the white rock," the name of the tribe. Keresan stock. The population seems to have been about 3,000 when the town was discovered in 1540. It dropped to about 450 in 1870 and has since steadily increased, the 1942 census giving 1,225 members of the tribe. The town was old in its present site when found. The people joined the revolt of 1680. The town is now nearly deserted throughout much of the year. The inhabitants largely live at villages which have grown up on the sites of temporary settlements near the fields. They are **ACOMITA** (Ah-ko-mée-tah), population 645 and 12 miles north of Acoma, and **McCARTY'S**, population 391, located 7 miles west of Acoma. The principal fiesta is on St. Stephen's day, September 2.

BACABI (2) (Báh-kah-bee) "place of jointed reeds." Hopi branch of the Shoshonean stock. On the west or third mesa about 100 miles north of the Santa Fe Railroad in Arizona. The 1930 population was 129. It was founded in 1907 by a group of conservatives, who after having left Oraibi for Hotevilla, wished to return and were refused admittance.

COCHITI (3) (Ko-tchi-tée). Spanish spelling of the native name Kotyete, of unknown meaning. Keresan stock. 27 miles southwest of Santa Fe. The population in 1680 was about 300 and it has remained near this figure ever since. The 1942 figure was 324. The Cochiti people are half a tribe, the remainder being the San Felipe people. The split and the founding of the present pueblo came not long before the Spanish discovery in 1598. The pueblo joined the 1680 revolt and for some years during the period lived in a town on the mesa above the present village. The principal fiesta is on St. Bonaventura's day, July 14.

HANO (4) (Háh-no). Possibly from a nickname of the Tewa, the syllable "ha" being common in their language. An exact explanation is impossible. Tewa branch of the Tanoan stock, mingled with much Hopi blood. On the east or first mesa, about 75 miles north of the Santa Fe Railroad in Arizona. The 1930 population was 309. The town was founded about 1700 by Tewa people from the upper Rio Grande valley in New Mexico.

HOTEVILLA (5) (Hó-te-vil-la) "a skinned or scraped back." Hopi branch of the Shoshonean stock. On the west or third mesa, about 100 miles north of the Santa Fe Railroad in Arizona. The 1930 population was 418. The town was founded in 1906 by the conservative group of Oraibi, after losing a bitter dispute about the adoption of a liberal policy regarding white civilization.

ISLETA (6) (Iss-láy-tah) Spanish for "islet". The native name is Shiewhibak, "knife-whibstick-ridge". Whib is a stick-kicking game. 13 miles south of Albuquerque, New Mexico. Tigua branch of the Tanoan stock. There is a group of Keresan people, the descendants of emigrants from Acoma and Laguna. The population was about 2,000 in 1680, dropped off sharply and increased gradually to about 1,000. This number has been maintained for many years, the 1942 figure being 1,222. There was a town on the present site before 1540 and up to the 1680 rebellion. As many Spaniards fled to Isleta during the beginning of the revolt it did not join in the fighting until later, at which time the old town was abandoned. The present village was founded early in the 18th century on the site of the old. Little colonies of a few families are beginning to move away from the town to farms along the Rio Grande. In 1681 about 400 of the people were transferred to a new Isleta near

El Paso, Texas. (See last heading of this leaflet.) The principal fiesta is St. Augustine's day, August 28.

JEMEZ (7) (Háy-mes). From Hemis, the native name for "Jemez people" or from Haemish, the Keresan name. The native name is Tuwa, Tukwa or Tuyó, meaning "at, or to, the pueblo." 25 miles northwest of Bernalillo, New Mexico. Jemez branch of the Tanoan stock. From a low figure of 344 in 1871 the population has gradually mounted to about 600. This level has been maintained in recent years. The 1942 figure was 719. At the time of the discovery the Jemez tribe was living in many towns in their present neighborhood. Spanish influence gradually forced them into two before the 1680 rebellion. The Jemez were very active in this uprising, attacking the Spaniards and other Indians again and again. Not until about 1700 did peace finally come. The present pueblo was built at this time. In 1838 the few remaining inhabitants of Pecos abandoned that town and moved to Jemez, where some of their descendants still live. The principal fiesta is on St. James' or San Diego's day, November 12.

KIAKOCHOMOVI (8) (Kee-ah-kó-tcho-mo-vee) "place of the hills of ruins." Hopi branch of the Shoshonean stock. About 100 miles north of the Santa Fe Railroad in Arizona. The 1930 population was 355. This town was begun about 1890 at the foot of the west or third mesa by people from Oraibi who found it more convenient to live on the plain rather than on the mesa top.

LAGUNA (9) (Lah-góo-nah) Spanish for "lagoon". The native name is Kawaik, of unknown meaning. 45 miles west of Albuquerque, New Mexico. Mixed pueblo stock, with Keresan as the language. The stock is very mixed, there being clans from the Keresan, Tanoan, Shoshonean and Zuñian stocks. The present town was founded in 1699 as a new pueblo and not as the successor of an older one. Until 1871 most of the people passed their winters at the pueblo and their summers in the farming villages. But increasingly since then the tendency has been to stay permanently at the villages, so that the old pueblo is being abandoned. From 1860 to 1942 the population increased from 927 to 2,573. The population is located as follows: **OLD LAGUNA**, 503; **MESITA** (May-sée-tah) Spanish for "little mesa," 5 miles east, 203; **PAGUATE** (Pah-hwá-tay) 13 miles north, 619; **ENCINAL** (En-see-náhl) Spanish for "oak grove," 8 miles west, 170; **PARAJE** (Pah-ráh-hay) Spanish for "residence," 5 miles west, 221; **SEAMA** (See-áh-mah) "place of Sia people," 8 miles west, 291; **CASA BLANCA** (Káh-sah Bláhng-ka) Spanish for "white house," 5 miles west, 139.

MISHONGNOVI (10) (Mih-shóng-no-vee) "place of the black man." Hopi branch of the Shoshonean stock. About 90 miles north of the Santa Fe Railroad in Arizona. The 1930 population was 266. On the middle or second mesa. It was built about 1700 by the inhabitants of an older town which stood not far away, and which had been abandoned during the 1680 rebellion.

MOENKOPI (11) (Mó-en-ko-pee) "place of running water." Hopi branch of the Shoshonean linguistic stock. Near Tuba City, Arizona, about 50 miles northwest of the other Hopi towns. The 1930 population was 388. This town was founded about 1875 by people from Oraibi searching for better farm land. An older town, in existence in 1604, underlies the present houses.

NAMBÉ (12) (Nahn-báy). This is the native name, meaning "the roundish earth," and referring to a mound of earth nearby. 16 miles north of Santa Fe, New Mexico. Tewa branch of the Tanoan stock. While census figures indicate that the population has been slowly gaining, other figures show the opposite. The 1942 census figure was 136, but this is undoubtedly too high. The present town has been in existence since pre-Spanish times, according to the scanty available information. The principal fiesta is on St. Francis' day, October 4.

ORAIBI (13) (O-íye-bee) "place of a particular rock called Oraí (meaning unknown)." About 100 miles north of the Santa Fe Railroad in Arizona on the west or third mesa. Hopi branch of the Shoshonean stock. The 1930 population was 87. This town, the oldest continuously inhabited place in America, was founded about 1150 A.D. and was for centuries the most important town of the Hopi, with thousands of inhabitants. Oraibi joined the 1680 revolt, but was not injured as the Spanish did not return. In recent years internal troubles and changing economic conditions have caused most of the people to move away, so that the old pueblo will soon be an abandoned ruin.

PICURIS (14) (Pee-koo-reéce) Spanish of unknown meaning. The native name is Piwweltha or Pinuelta, "gap or pass in the mountains." Tigua branch of the Tanoan stock. 40 miles north of Santa Fe, New Mexico. The town was once a considerable one, but for many years the population has been about 100. The 1942 figure was 106. The present town was founded about 1693 near the site of its predecessor, which was abandoned during the 1680 revolt. In 1704 some of the people fled to Quarteleyo, an Jicarilla Apache settlement in Scott County, Kansas. They returned in 1706. There is said to be considerable Jicarilla blood in the pueblo. The principal fiesta is on August 10.

POJOAQUE (15) (Po-hwá-kee). Corruption of Posunwage, "drink water place." No Indians remain at this place, which is 18 miles north of Santa Fe, New Mexico, but it is mentioned because of its recent abandonment. The people were of the Tewa branch of the Tanoan stock. The pueblo, now entirely occupied by Mexicans, was built before Spanish times. It was abandoned during the rebellion, but resettled in 1706. The population was never large and dwindled steadily until 1900, when the handful of Indians scattered among the other villages. 24 are listed for 1942.

POLACCA (16) (Po-lák-kah). Named for Tom Polacca, a progressive Tewa from Hano, who built the first store. Hopi branch of the Shoshonean stock together with some Tewa of the Tanoan stock. About 75 miles north of the Santa Fe Railroad in Arizona. The 1930 population was 787. This town was begun about 1894 by Hopi and Tewa from the top of the east or first mesa who found it more convenient to live on the plain at the foot of the mesa. The town is little like an old pueblo, being a collection of quite modern individual houses scattered over a considerable area.

SANDIA (17) (Sahn-dée-yah). Spanish for "watermelon." The native name is Nafiat. The exact meaning is unknown but it is connected with dust or sand. 13 miles north of Albuquerque, New Mexico. Tigua branch of the Tanoan stock. After a period of decline the pueblo has been slowly growing. The 1942 population was 131. The people abandoned their old pueblo during the 1680 rebellion. Some of them are

supposed to have lived among the Hopi in the now ruined pueblo of Payupki. These people, together with Indians of other stocks, returned to their old neighborhood about 1745 and built the present pueblo. Not many Indians could have made these trips as the pottery of this period in the two areas shows no influence of the visitors. The principal fiesta is on St. Anthony's day, June 13.

SAN FELIPE (18) (San Fay-lée-pay). Spanish for St. Philip. The native name is Katshtya, the meaning of which is unknown. 12 miles north of Bernalillo, New Mexico. Keresan stock. The population has remained close to 500 for many years. The 1942 figure was 660. The people of this pueblo are half a tribe, the remainder being at Cochiti. The split occurred in the 16th century. At the time of the rebellion the tribe was living in a pueblo across the Rio Grande from the present site. During the rebellion the people lived in several places in the vicinity, being very active in resisting the Spaniards. Toward the end of the period they lived atop a mesa west of the modern town. About 1700 they moved down to found the village of today. The principal fiesta is on May 1.

SAN ILDEFONSO (19) (San Ill-dee-fón-so). Spanish for St. Ildefonso. The native name is Pokwoge, meaning "where the water cuts down through." 18 miles northwest of Santa Fe, New Mexico. Tewa branch of the Tanoan stock. In 1800 the population was about 150, but in recent years it has remained near 100. The 1942 figure was 139. Before the 1680 rebellion the town was on a slightly different site. The tribe did not enter the rebellion until 1696, when they fled to a nearby mesa top. They were only dislodged from this after a long struggle. The present town was founded about 1700. The principal fiestas are on January 23 and September 6.

SAN JUAN (20) (San Hwahn). Spanish for St. John. The native name is Ohke, of unknown meaning. Tewa branch of the Tanoan stock. 25 miles northwest of Santa Fe, New Mexico. The population has been gradually increasing since 1860. The 1942 figure was 639. The tribe occupied several towns in the vicinity prior to the 16th century. The present town was founded at the end of that period. In 1598 the Spaniard Oñate took over the neighboring pueblo of Yugeuingge as his headquarters and San Juan received the ousted Indians. For this friendly act it was called "San Juan de los Caballeros." San Juan was always considered to be the chief town of the Tewa. The principal fiesta is on St. John's day, June 24.

SANTA ANA (21). Spanish for St. Anne. The native name is Tamaya, of unknown meaning. 12 miles northwest of Bernalillo, New Mexico. Keresan stock. Formerly somewhat larger, the population has for many years been close to 230. The 1942 figure was 271. Before and during the 1680 rebellion, in which the tribe took an active part, several towns were occupied. The present town was founded in 1692 or shortly after. In recent years many of the people have taken to spending all their time at the old farming village of **EL RANCHITO**, 2½ miles north of Bernalillo. This town is permanently established and will probably eventually entirely supplant Santa Ana. The principal fiesta is on July 26.

SANTA CLARA (22). Spanish for St. Clara or Claire. The native name is Kapo, the meaning of which has never been surely explained. 30 miles north of Santa Fe, New Mexico. Tewa branch of the Tanoan

stock. The population has been steadily gaining since the first American census of 1860. The 1942 figure was 485. The present town has been in existence since before 1540.

SANTO DOMINGO (23) (San-to Do-meen-go). Spanish for St. Dominic. The native name is Kyeewa, of unknown meaning. Keresan stock. 18 miles north of Bernalillo, New Mexico. The population figures show great variation, but the average has been about 900. The 1942 figure was 918. Three towns preceded the present one, which was founded about 1700. The earlier pueblos were destroyed by floods and the modern town has suffered in the same way several times. The pueblo was active in the 1680 rebellion. The principal fiesta is on St. Dominic's day, August 4.

SHIPAULOVI (24) (Shi-p6w-lo-vee) "the mosquitoes." Hopi branch of the Shoshonean stock. On the middle or second mesa about 90 miles north of the Santa Fe Railroad in Arizona. The 1930 population was 123. The town was founded about 1700 by groups from several other Hopi towns, especially Shung-opovi, because of their fear of Spanish vengeance after the 1680 rebellion.

SHUNG-OPOVI (25) (Shung-6-po-vee) "place by the spring where the tall reeds grow." This name is incorrectly spelled more often than that of any other pueblo, the common spellings being variants of Shimopovi. Hopi branch of the Shoshonean stock. On the second or middle mesa about 90 miles north of the Santa Fe Railroad in Arizona. The 1930 population was 307, an increase over previous years. While the present town dates only from about 1700, after the abandonment of its predecessor during the 1680 revolt, the general location has been occupied for centuries. Tribal tradition states that Oraibi was founded by people from old Shung-opovi.

SIA, TSIA or ZIA (26) (Tsée-ah). Derived from Tseja, the native name, of unknown meaning. Keresan stock. 20 miles northwest of Bernalillo, New Mexico. The population was long about 100, but in recent years there has been a slow increase. The 1942 figure was 223. The people claim that the town has been on its present site since pre-Spanish days. The existing pueblo was founded about 1690 on the ruins of the old town, which had been destroyed in the bloodiest fight of the 1680 rebellion. The principal fiesta comes on August 15, the Feast of the Assumption of the Virgin.

SICHOMOVI (27) (Si-tcho-mo-vee) "place of the mound where the wild currant bushes grow." Hopi branch of the Shoshonean stock. On the first or east mesa about 75 miles north of the Santa Fe Railroad in Arizona. The 1930 population was 315. It was founded about 1750 by people from the neighboring Walpi, who were later joined by Tanoan clans from the Rio Grande valley in New Mexico.

TAOS (28) (Táh-os). Spanish corruption of the native name, Tuata, "down at the village." Tigua branch of the Tanoan stock. 52 miles northeast of Santa Fe, New Mexico. The population was about 2,000 in 1680, but declined rapidly until the mid-nineteenth century, when a steady increase began. The 1942 figure was 801. Taos, the most northerly of the pueblos, has been involved in many conflicts. It was a center of operations for the rebels in 1680 and 1696, suffered much from Plains Indian raids during the 18th century, and was the scene of the Taos rebellion against the Americans in 1847. The present town was founded about 1700 a few hundred yards from the site of its predecessor. About 1650 some of the tribe moved to a settlement of Jicarilla Apache at Quartejejo, in Scott County, Kansas, and built a pueblo in which they remained until about 1700. There has been much inter-marriage with the Ute and Jicarilla Apache. The principal fiesta is on San Geronimo day, September 30.

TESUQUE (29) (Teh-s6o-ke). Spanish corruption of the native name Tatunge, "at the dry spotted place." Tewa branch of the Tanoan stock. 9 miles north of Santa Fe, New Mexico. The population has been about 100 for many years, with a recent tendency to increase. The 1942 figure was 139. The present town was built about 1700 not far from the old town, which was abandoned during the rebellion. Tesuque has long been considered one of the most conservative of the pueblos. The principal fiesta is on St. James' or San Diego's day, November 12.

WALPI (30) (Wáhl-pee) "place of the gap." Hopi branch of the Shoshonean stock. On the first or east mesa about 75 miles north of the Santa Fe Railroad in

Arizona. The 1930 population was 163 and has been decreasing in recent years. It was founded about 1700 by the people of an older town on a lower terrace of the mesa. The Hopi blood is considerably mixed with that of other pueblo races. The town is being deserted quite rapidly, the tourist business being quite largely responsible for the remaining population. The people are moving down to Polacca at the foot of the mesa.

ZUÑI (30) Z6on-yeē). Derived from the Keresan or Tewa word Sunyi, the meaning of which is unknown. The native name for the tribe is Ashiwi, "the flesh." Zuñian stock. 42 miles southwest of Gallup, New Mexico. The stock is not pure, having had many additions from other tribes. The population was about 2,500 in 1680, but declined until recent years, when an increase has been under way. The 1942 figure was 2,205. When discovered by the Spaniards in 1539 the Zuñi were living in seven towns. The tribe declined until at the time of the rebellion but three towns remained. All were abandoned during the struggle, the people living on a nearby mesa. The present town was established about 1695 on the site of Halona, one of the original seven. In recent years the population has more and more tended to live permanently at the summer farming villages, some of which have been in existence for centuries. These towns are: **OJO CALIENTE** (O-ho Kal-ee-én-te) Spanish for "Hot Spring," 16 miles southeast, population about 200; **TEKAPO** (Te-káh-po), 8 miles west, population about 50; **NUTRIA** (N6o-tree-ah) Spanish for "otter", 22 miles northeast, population about 150; **PESCADO** (Pes-káh-do) Spanish for "fish", 16 miles east, population about 75. The principal Zuñi fiesta is the Shalakó, held in late November or early December.

PUEBLOS NEAR EL PASO. A few miles south of El Paso, Texas, are three settlements whose present inhabitants are the descendants of Pueblo people who were placed there about 1680 by the Spanish. The towns are Isleta (or Ysleta) del Sur, Senecu del Sur and Socorro del Sur, "del Sur" meaning "of the south." Socorro is in Texas and the others in Mexico. The Isleta people are Tigua from the northern Isleta. Senecu contains the last remnants of the Piro and some Tigua. The Socorro people are Piro. The Tano villages were destroyed by the 1680 rebellion, the survivors fleeing to the Hopi and the New Mexican pueblos. A few scattered members of the division may survive. Apache raids forced the abandonment of the Piro towns before 1680.

The El Paso pueblos are almost completely Mexicanized. Thirty years ago a few greatly changed customs and a few speakers of the language survived. Up-to-date information is lacking, but it is extremely probable that every trace of aboriginal life and language has gone.

Compiled by F. H. Douglas from the following sources:

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DENVER, COLORADO

Department of Indian Art

NORMAN FEDER

Curator



Leaflet No. 47 - May, 1932

HOPI INDIAN POTTERY

THE HOPI INDIANS are a sedentary, agricultural people of Shoshonean stock living in eleven villages in north central Arizona. Eleven villages or pueblos are on or at the foot of three mesas or tablelands, while the remaining one, Moenkopi, is located about fifty miles west of the mesas, near Tuba City. There is also one Tewa village, Hano, on the first mesa. A 1930 count of the Hopi, including all those at the villages, those at school and those living elsewhere, showed 3,647 persons. For further information about the Hopi see leaflets 4, 8, 9, 13, 17, 18, 43-44 and 45-46.

POTTERY HISTORY. While pottery sherds from a much earlier date have been found in the Hopi country, pottery which was made by people who can be called Hopi dates from the end of the 13th century. This ware was a decadent black on white or black on orange. About 1300 a new variety appeared, called Jeddito yellow, showing black designs on a clear yellow ground. The first designs were geometric and later developed into more realistic forms. About 1425 this ware reached a high degree of perfection, with black and red, later with white added, on a yellow ground. The best of this ware is called Sikyatki, after a pueblo probably founded by Keresan people from the east. This kind of pottery (A) with its highly conventionalized life forms, is considered to be the high points of Indian ceramics. During the 16th century the ware became decadent, with poor heavy work and over elaborate design. The establishment of the Spanish missions in the early 17th century influenced the shape of the pottery and further increased the decadence. From 1700 to 1800 a poor ware with dull colors, rough finish and geometric designs was made. The colors were black and red on yellow. About 1800 the designs begin to show a strong Zuni influence (B). Even the colors were like those of Zuni. The ware showed a crackled surface (C). In 1897 the late Dr. Walter Fewkes excavated the ruin of Sikyatki and discovered the beautiful old pottery which had been made there. This discovery resulted in the revival of the Sikyatki style by the Tewa woman, Nampeyo—see last heading of this leaflet—and the beginning of the present style of Hopi pottery described in this leaflet.

LOCATIONS. Decorated pottery was formerly made at all the Hopi towns, but the art has gradually declined until it is now only made in quantity at Sichomovi, Hano and Polacca, the modern village on the plain below. A little is made at Walpi. Cooking and storage ware is made to some extent in most of the towns.

CLAY PREPARATION. About a dozen kinds of clays are found between the massive layers of sandstone which make the mesas, but only a few of these are ordinarily used. The dry, hard clay is dug out by the women and carried to their homes, where it is broken up, soaked, freed from stones and sand and thoroughly kneaded. Freedom from cracking is insured by the last process. Temper of sand is only added to clay to be used in making rough cooking ware. Enough clay for several pieces is prepared at one time and kept in damp storage. When a pot is to be made enough clay is spread on a stone slab and allowed to dry to the proper condition for working.

MOULDING. A lump of clay is flattened in the hands and pressed out into disk form upon a saucer or piece of old pottery. On this base a succession of coils is built up. The coils are pressed together with the fingers and their corrugated surface somewhat smoothed with various pieces of gourd cut in different curves. This smoothing process is not carried as far among the Hopi as in other pueblos. In making large

vessels only a few coils can be added at a time. So while each section of a large piece is drying work may be done on other pieces. The shape of the vessel is regulated by varying the diameters of the successive coils. Hands and tools are kept moist.

DRYING. When the moulding of a piece is completed it is dried by placing in the sun, under the cook stove, or in the oven of the stove. If the clay has been insufficiently kneaded the piece will crack. Small flaws can be overcome, but large ones result in the destruction of the piece.

SMOOTHING. Pieces which have successfully met the drying test are now smoothed with a piece of sandstone or bit of sharp metal. All signs of the coils are removed, small rough spots are leveled and the walls are reduced to the necessary thinness.

POLISHING. Pieces which are not to be coated with slip—see below—are polished at this point. The smoothed pot is moistened and rubbed long and thoroughly with a water-worn pebble. This process imparts a high polish to the piece. Slipped pieces are polished in the same way after the slip has been applied.

SLIPPING. The Hopi use two slips, white and red. The white is made by grinding a fine quality local white clay in water until a creamy liquid is formed. The red slip is made from a yellow clay in the same manner. The smoothed pots are coated with the slip, which fills the pores of the clay and makes the surface perfectly smooth and even. The slip is applied with a rabbit's tail. Several coats are applied. At the conclusion the pieces are dried and polished in the manner described above.

PAINTS AND BRUSHES. Black, yellow and white are the colors used. Yellow is made from a clay containing iron oxide or ochre. The firing changes it to orange or red. White comes from a clay of that color. Black is made by boiling the plants of the Tansy Mustard. The sediment is strained off and the remaining liquid allowed to harden into a dry cake. When mixing this with water, finely ground black clay is added to give it body. In reference four the late Frank Applegate says that he made this black more permanent by mixing a little silicate of soda, or waterglass, with it. Enough water is added to the paint to bring it to the consistency of thin cream. Brushes are made from pieces of yucca stem. The pulp is removed from one end and the remaining fibres form the brush.

PAINTING. The potter, with very few exceptions always a woman, sits on the floor, her back against the wall and her legs stretched out before her. Her paint pots, brushes, etc., are placed close by. The pot is held in the left hand and is either rested against the leg or held in the air. The design is painted free hand, no guiding tools being used. The main idea of the pattern is conceived in the painter's mind, so that no sketch is necessary. The larger lines and design masses are applied first and small details follow. Solid masses are outlined and then filled in. The painting is done with unerring skill and accuracy. Customarily but one coat is applied.

FIRING. Available accounts of the Hopi firing process vary considerably in detail. One says that the pieces are not heated before firing, another that the pots are heated in the stove oven and a third that they are thoroughly heated by placing them around the fire over which the fuel oven is later built. Individual practice probably largely determines the procedure. A circle of stone is built and in it a fire of cedar chips, dried sheep manure and often native coal is made. When this has burned down to a bed of coals the pots are placed over it, either on bits of stone,

a layer of broken pottery or bits of iron rods or sheeting. The pots are piled upside down on each other. Around this pile is built an oven made of blocks of dried sheep manure, laid in courses of gradually decreasing diameter. The top of the cone is closed with one large block. Two accounts, the most recent, say that a second layer of sherds is piled over the pots, between them and the walls of the oven. The fire burns for from four to eight hours. In some cases the pottery is removed when the fire is out, while in others twenty-four hours is allowed to pass, during which the ware entirely cools.

FINISHED APPEARANCE. Well fired unslipped pottery has a mottled background, shading from light cream through yellow to orange, the depth of the color at any one point being determined by the amount of heat which reached it. That with the yellow slip burns an even, fairly dark reddish orange, and that having the white slip remains white. The decorations are in black or dark brown, dark reddish orange, and white. Occasional black smudges are due to smoke coming in too close contact with the spot. Reference four says that the ware has a much better ring when struck since the late Frank Applegate conducted extensive experiments with different clays and tempers and showed the potters the materials which would give the best results. This was in 1922. The ware is rather thick.

SHAPES AND USES. The most characteristic Hopi shapes are the shallow bowl with incurving rim from 6 to 15 inches across and from 1 to 4 inches deep (D), and the jar, with a flattened shoulder and small mouth, ranging from 4 to 20 inches across and from 3 to 10 inches deep (E). Bowls with outcurving rims (F) and spherical jars are also made (G). Canteens with one flat side (H), dippers with long tubular or short loop handles (J), ceremonial bowls and dippers with terraced cloud pattern rims (K), small flat tile (L), tiny paint pots (M), rattles (O), and various eccentric forms are also made. Candlesticks, tall slender vases (N), ash trays and other articles inspired by the whites are made today. In the rough undecorated ware there are large storage jars and cook pots of varying size.

DESIGNS. The vast majority of modern designs are extreme conventionalizations of bird forms or parts of them. The use of these designs is directly due to the revival of the art in the period following the Sikyatki excavations in 1897. By the end of the 17th century the old Hopi designs had largely disappeared. The coming of the Tewa to Hano about 1700 introduced a new style which was largely influenced by Zuni designs. This in turn gave way under the leadership of Nampeyo to the more or less exact copying of the wonderful designs of the Sikyatki school. So today the Hopi ceramic art largely consists of modern reproductions of 15th century designs executed by potters of another tribe, though long resident among the Hopi. For a lengthy discussion of Hopi design see reference two. Geometric designs and human and animal figures sometimes occur.

NAMPEYO. When Fewkes excavated Sikyatki in 1897 one of his workmen was a Tewa from Hano. This man's wife, Nampeyo (Nahm-pá-yo) became deeply interested in the old designs, shapes, and clays. With great persistence she set herself at the task of reviving the Sikyatki ceramic school. Coupled with her determined spirit was an extraordinary artistic ability and sensitivity. In the thirty odd years since she began her work she has executed hundreds of pieces which are masterpieces of pottery shape and design. Artists and experts of every school of thought have united in calling this woman one of the greatest of American artists. She is now old and almost completely blind, but her work is being carried on by her daughters.

Compiled from the following sources by Jean Allard Jeançon and F. H. Douglas:

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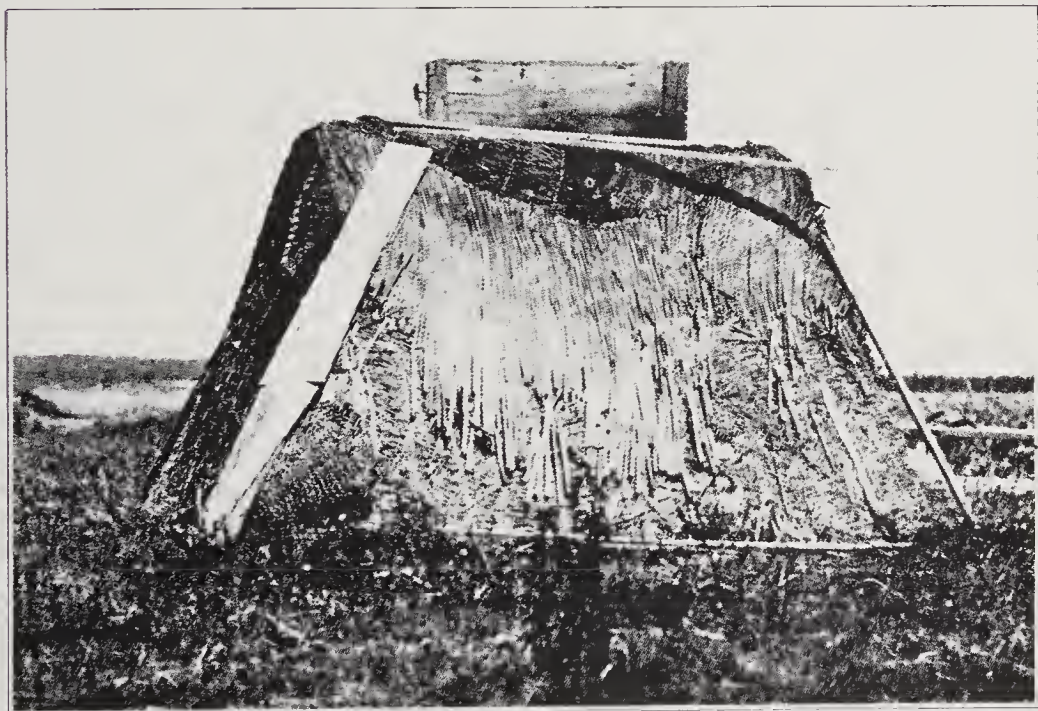
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KLAMATH SUMMER HOUSE
(University of California)

Leaflet No. 48 - May, 1932

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THE KLAMATH INDIANS

THE KLAMATH INDIANS are a semi-sedentary people belonging to the Lutuamian linguistic stock now living on the Klamath reservation in south central Oregon. The present population is about 475, of whom about 175 are full blood. The tribe has been steadily decreasing in numbers from a high point of about 1,200.

PRESENT CONDITION. The Klamath have been unusually receptive of the white man's way of living, so that much of their old life has disappeared. The descriptions contained in this leaflet are very largely of things which no longer exist. The available information does not clearly state how much of the old life remains.

NAME. The people call themselves maklaks, meaning "men". The word Klamath, pronounced kla-met by them, is of unknown origin and meaning. Ogden, the discoverer of the tribe, heard of them as "Clam-mitte" from the Columbia River tribes. The tribe should not be confused with those California tribes who live on the Klamath River in that state and are locally called Klamath River Indians.

HISTORY. The Klamath have lived in their present territory for a very long period. There seem to be no traditions of migrations. They first saw the whites about 1825. Ogden spent some time with them in 1826-27 and Fremont passed by in 1843 and 1846. Another party, perhaps French-Canadian, visited about 1835. During the fifties the tide of immigration to California passed through their territory, without, however, disturbing them very much. In 1864 they ceded their land to the government and were placed on their present reservation. They have never been at war with the whites, having had no part in the Modoc troubles of 1872-73.

HABITAT. The Klamath center about Klamath Lake and Marsh and the connecting Williamson River in south central Oregon. The country is a shallow basin in a high plateau, with the Cascade range to the west and mountainous desert and lava country north, south and east. There is timber on the western mountains and fertile valleys lie in the eastern desert. Much bird, animal and fish life existed because of the extensive marshes. The winters are severe. There is little rainfall in the summer and it is often very hot.

PHYSIQUE. The people are rather light colored and tend to lack the high cheekbones and prominent jaws so common among Indians. The men are inclined to be tall and slender and the women short and often stout. Flattening of the forehead was extensively practiced. A pad was applied to the child's head while in the cradle. Naturally shaped heads were derided and called slave-like.

TRIBAL ORGANIZATION. The Klamath nation is split into four or five little tribes, each living as an independent group in its own area. But the groups are united to a considerable extent by their common language and culture. The group around Klamath Marsh and the Williamson River, comprising about half the tribe, are considered to be the true Klamath. Chieftainship is but little developed. Not every division has chiefs. The office seems hardly to have existed before 1864, when contact with the government and with northern tribes introduced the idea. After this any man who was rich, a good warleader and a convincing talker might be a chief during his life. But there were but few such leaders. Leleks, who lived during the middle of the last century, was the most celebrated. Each little group ran its own affairs to suit itself. The shaman or medicineman was the most powerful leader. The Klamath have no trace of clan or gentile organization.

RELIGION. There is no organized system of gods. The people believe in a multitude of spirits which are not sharply defined. The principal religious activity of the people consists in endeavoring to get "power" from these spirits by means of fastings, vigils on the mountains, etc. Everyone seeks for power at least once. The spirits are mostly mythical living beings of all sorts, and natural phenomena. These creatures are connected with hundreds of locations in Klamath territory. The shamans, or medicine men or women, are the strongest influences in the tribe. They are believed to have control of many spirits who enable them to cure disease, to regulate the weather, to foretell the future and to perform many magical feats. These latter are exhibited in the five-day performances held in December in the shamans' houses. Besides these ceremonies there were a girl's puberty ceremony and dances before and after war. The first Ghost Dance wave of 1870 gained some

ground in the tribe, and in recent years the semi-Christian native Shaker religion has been strong. The Baptist church has been at work for many years.

DWELLINGS AND VILLAGES. Two house types were used, similar in shape but differing in materials used. In winter a circular knee deep pit was excavated from 12 to 35 feet in diameter. In the floor of the pit four posts were erected at the corners of an elongated rectangle. The tops were connected with stringers. Four bracing logs extended from this frame to the edge of the pit. The roof was made by placing a series of rough planks close together, the planks reaching from the edge of the rectangle to the pit edge. A layer of tule mats was placed on the planks, to be in turn covered with a layer of grass and then of earth. The open rectangle on the roof served both for entrance and smoke hole. The summer house was the same except that it had no pit and only mats on the roof. It was entered through one side. Outside each earth-lodge was a cook house with a dome of bent over rods covered with mats. Sweat lodges were small replicas of the summer and winter houses. The larger buildings were for several families or for one family with several wives. The shamans' houses were the largest. They had roughly painted supporting poles.

The winter houses were arranged in towns straggling along the lakes or rivers. They were not in compact villages. The summer houses were erected according to the individual needs of each family as it wandered over the territory of the tribe.

CLOTHING. In primitive times men usually wore only a skin breech cloth, a fringed skirt of tule, sage-brush bark or leather, and a basket cap. Later garments of the Plains type were used, shirts, leggings and moccasins of leather. The use of Plains-type garments was restricted to the rich. The usual moccasin was made of woven tule or grass. Leggings were also sometimes made of tule.

Women originally wore the breech cloth, fringed skirt—longer than that of the men—and basket hat. Later they adopted the long dress of the Plains women, but made of deer rather than elkskin, short leggings and moccasins. They wore moccasins less than did the men. In the winter elbow length fur mittens were used. Snowshoes were used. Face painting and tattooing were common.

FOOD. Fish is the most important food. Several varieties are caught with nets—rarely with spear or hook—and dried. Crawfish and freshwater clams are eaten. Though animal life abounded not much meat was eaten. Deer, elk, antelope, mountain sheep, bear, many small animals and water fowl were eaten to some extent. Dogs were not eaten. The seeds of the water lily, *Nymphaea polysepala*, called wokus by the Klamath, is the next most important food after fish. A wide variety of other roots and berries are eaten. Salt was introduced by the whites. See reference one for a complete list.

WAR AND WEAPONS. Before reservation days began in 1864 the Klamath indulged in considerable fighting with their neighbors, except for their close kin the Modoc and the Columbia River tribes. Raiding for slaves to be traded for horses was the main type of action. The Pit River tribes in California were the especial targets of these raids. The Klamath also had to defend themselves against raids from their surrounding enemies. The Klamath triplets fought amongst themselves. The warriors wore long hide robes for armour, or vests made of narrow wooden slats tied together with cord. The shield was rare. The bow and arrow, wooden club and short spear with obsidian blade were the offensive weapons.

TRANSPORTATION. Until horses were obtained about 1840 all travel was on foot or by canoe or tule rafts. The canoes are crude dug-outs made from fir logs. They are from 10 to 18 feet long, 18 to 24 inches wide and about 16 inches deep. Until iron became available they were made by burning with fire and scraping with stone or elkhorn tools. Except in the marshes, when a fork-ended pole is used by a standing person, they are propelled with long bladed cedar paddles held by a person seated near the stern. Several tule bundles, 2 feet in diameter and 8 to 15 feet long, were lashed together to form rafts. These were propelled by the hands.

BASKETRY. Flexible caps, flat trays and bowls of various sizes are made in close plain twining with a twisted double warp of tule, *Scirpus lacustris occidentalis* and wefts of cat-tail, *Typha latifolia*. Geometrical designs in red-brown tule root or cat-tail dyed black with mud and wokus pods appear on a light cream to tan ground. Porcupine quills dyed yellow are sometimes used in the designs. Conical burden baskets, seed beaters, ladles, winnowing baskets, cradles, moccasins and leggings, fish traps, and mats are made in coarse open twining, principally from unsplit tule stems, though willow and juniper root are also used to a slight extent. For details of more unusual technics and materials see references one and two. There are about ten women who still make baskets.

MANUFACTURES. Woodwork was restricted to canoes, rough planks, the carved

figures in shamans' houses, spoons and digging sticks. There were no stone axes or adzes. Cutting was done with elkhorn and stone or shell knives. Fire was made by rotating a stick on a piece of wood on which wood dust was piled. Sewing was done with a bone awl and deer sinew. Rope was made of grass or tule stems. Cord was made of nettle or flax fibre. Food was ground on metates with a muller which was likely to have a double handle peculiar to the tribe, and with stone mortar and pestle.

MUSIC. There are many songs to accompany every activity. The shaman's songs, at least, do not have a number of meaningless syllables inserted. A flute without tongue or reed is made from pithy wood. It is played by blowing across the open end. Rattling sounds are produced by jarring a long stick to which deer hoofs are attached, by striking the split end of a stick on the palm and by rubbing one stick over another in which notches are cut. No resonator is used with the latter. The drum is a small one-headed instrument. Whistles and the musical bow are used for toys. Lip whistling is done.

GAMES. There are several dice and dice-like games, and games involving guessing about hidden objects. The tribe is one of the few which play the four-stick game of the latter type. The women play double ball, the latter being two billets of wood with a connecting string. The men play shinny. There are several variations of the hoop-and-pole and cup-and-ball games. Tops are spun and string figures made. There are foot races, trials of weight lifting, wrestling matches and diving contests. There are occasional social dances.

SMOKING. Both men and women smoke a wild tobacco, *Nicotiana attenuata* Wats., sometimes mixed with manzanita or bearberry. Clay pipe bowls are spherical and those of stone are discoidal or elbow-shaped. The stems are of elder. The shaman's pipe has a longer stem but no special significance. Smoking is apparently only for pleasure and is not ceremonial.

CUSTOMS. Children are born in a special lodge. There is no special celebration. Babies are kept in a cradle of tule or willow for a month or two and are then placed on a stiff carrying board. Names, usually taken from some personal characteristic, are given the babies by the parents. They may be changed later. Most marriages are arranged by the couple themselves, though a girl may be forced into marriage by her parents. Marriages are accompanied by mutual gift-giving. Failure to do this is a social disgrace. Anyone not a relative may be married. Divorce is easy, a wife simply leaving her husband. Polygamy was possible for a rich man. The dead are well dressed, wrapped in a tule mat and conveyed to the cremation place for burning after five days. Much property is destroyed with the body. The house is burned. The spouse and parents spend five days in the sweat lodge, seek a vision and observe certain rules about food and clothing for a year. Slaves were captured from neighboring tribes. They seem to have been fairly well treated. Many were traded into other tribes. The slave trade seems to have developed after the coming of the horse made contact with the slave-holding northern tribes easier. The spread of trade, chieftainship, and the idea of the importance of wealth all seem to have developed in the same way. The people are hospitable and friendly and live according to certain standards of good conduct, in which the children are definitely instructed.

Compiled from the following sources by F. H. Douglas:

UNIVERSITY OF CALIFORNIA, BERKELEY

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2. Material Culture of the Klamath Lake Indians—Barrett. Publications in American Archeology and Ethnology, Vol. 5, No. 4, 1910.

U. S. GEOGRAPHICAL AND GEOLOGICAL SURVEY

3. The Klamath Indians of Southwestern Oregon—Gatschet. Contributions to North American Ethnology, Vol. 2, 1880-81.

AMERICAN ANTHROPOLOGIST MAGAZINE

4. Klamath Gambling Games—Dorsey. Vol. 3, n.s. No. 1, 1901.
5. Klamath Head Deformation—Hrdlicka. Vol. 7, n.s. No. 2, 1905.

BUREAU OF INDIAN AFFAIRS

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GEORGE H. DORAN COMPANY

7. The Red Man in the United States—Lindquist. 1923.

BUREAU OF AMERICAN ETHNOLOGY

8. Handbook of the Indians of California—Kroeber. Bulletin 78, 1925.

Pictures 1, 2, 4, 8; details of every phase 1, 8; details of material culture 1, 2, 4; grammar and dictionary 3; history, religion, myths 1, 3.

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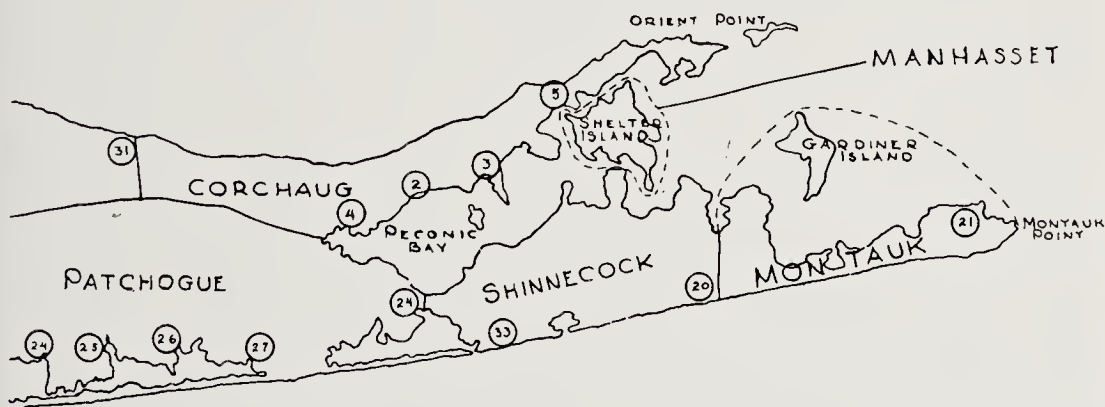
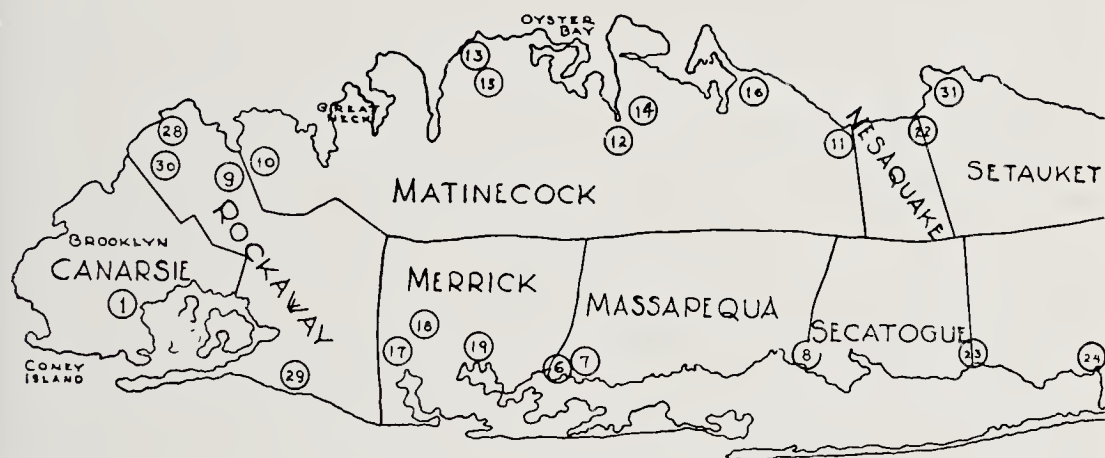
DENVER, COLORADO

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NORMAN FEDER

Curator

LONG ISLAND SOUND



ATLANTIC OCEAN

Leaflet No. 49 - June, 1932

LONG ISLAND INDIAN TRIBES

ALGONKIN. All of the tribes of Long Island were members of this linguistic stock, the largest in extent of territory in North America. A common dialect was not spoken over the whole island. Those tribes which lived on the western third or thereabouts of the island spoke a language which was closely connected with that of the Unami branch of the Delaware or Lenape, who lived on the Jersey side of New York Bay. The remaining tribes, especially those on the eastern part, spoke a tongue which was very closely related to that of the Pequot and Narragansett of Connecticut and Rhode Island. See leaflet 27-28.

TRIBAL ORGANIZATION. The Long Island Indians were divided into thirteen main groups, some of which had sub-divisions. These tribes were bands which were lead by families in which the chieftainships were hereditary. If there was no man to inherit a woman might serve. The distinctions between the bands were purely political, as all spoke the same or very closely related tongues and lived in much the same manner. The bands to the east were closely tied together in a confederacy lead by the Montauk. Often the heads of several different bands were closely related.

NAMES. When the Dutch arrived and learned the language they spelled the Indian names one way. The English chose another manner, and later generations of Americans corrupted both. The spellings used in this paper are those used by the Bureau of Ethnology. In Bulletin 30 of that Bureau, the Handbook of American Indians most of the variations will be found. Others are in reference four.

CAUSES OF DECLINE. Warfare between the island bands and with the mainland people seems to have reduced the population before the discovery. The coming of the white man had its usual effect. Those Indians who survived the guns of the Europeans were killed by arms given by the whites to other Indians, such as the Mohawk and Pequot. And finally the survivors of war fell victim to the diseases and vices of the whites and to the ill effects of the loss of their old accustomed food and manner of living.

POPULATION. The only available estimate of their population is that of Mooney, who says that in 1600 there were about 6,000 Indians on Long Island. Today there are a few hundred mixed bloods on the island and scattered elsewhere. The principal losses came with the Dutch wars of 1640 and 1664 and the pestilences of 1658 and 1662.

HISTORY. Hudson's landing on Long Island in 1609 was the first contact of the Indians with the white man. The island was not colonized to a great extent until about 1640, the Dutch having been busy at Manhattan and the English in New England. Once colonization began it spread rapidly. The Dutch towns were at the extreme western end and those of the English elsewhere. Both parties made extensive purchases of land from the Indians. The Dutch governors bought the land and distributed it among their people, while the English colonists bought direct from the Indian. The Indian considered these purchases as rentals or arrangements of joint occupation and objected strenuously when he was ordered away from his old haunts. These objections led to the wars in the middle of the 17th century. There was no fighting after about 1670, but the Indians who survived the wars rapidly vanished at the touch of civilization, so that by 1750 only a few hundred were left.

CANARSIE. An abbreviated corruption of a longer word meaning "the fenced place." This tribe owned most of King's County, part of Jamaica and spread over on lower Manhattan. Their chief village was at Flat-

lands. A division of the tribe, the Mareykawick, lived on the site of Brooklyn. By 1670 they had sold all of their land to the Dutch except that by their village at Canarsee (1). Wars with the Dutch and the Mohawk reduced them rapidly. The last member of the tribe died in 1800.

CORCHAUG. A corruption of Kehch-auke, "the greatest or principal place." This tribe held Riverhead and Southold townships. Their towns were at Mattituck (2), Cutchogue (3), Aquebogue (4) and Ashamomuck (5). Of these Cutchogue was the most important, being the site of one of the four palisaded forts of the then confederated four eastern tribes, Montauk, Manhasset, Shinnecock and Corchaug. The Yannocock were part of this tribe.

MANHASSET. This name is apparently connected with Manhasset, the common name of Shelter Island and meaning "island neighborhood." This tribe lived on Shelter and Ram Islands. Though living in a small territory the tribe was of considerable size, having an army of several hundred.

MASSAPEQUA or MARSAPEGUE "great water land." This tribe held the south shore of Long Island from Fort Neck (6), southwest of Amityville (7), to Islip (8) and inland to the center of the island. Their principal village was on Fort Neck (6). The Dutch attacked this fortified town in 1647, and in 1653 it was destroyed in the only large battle between Indians and whites held on Long Island.

MATINECOCK. A corruption of Matinne-auke-ut "at the hilly land." This tribe held the land from the middle of the island to the north coast from Newton (9) and Flushing (10) to the Nissequogue River (11). They seem to have been diminishing before the arrival of the whites because of wars with the Iroquois. By 1650 only a few dozen families remained. Their villages were at Flushing (10), Glen Cove (12), Cold Spring (13), Huntington (14), Dosoris (15), and Northport (16).

MERRICK or MEROKE or MERIKOKE. A corruption of Merri-auke-ut, "at the barren land." This tribe held the territory from the center of the island to the south shore between Rockville Center (17) and Fort Neck (6), near Amityville (7). Hempstead (18) lay in their area. Their principal villages were near the present Merrick (19) and on Hicks' Neck.

MONTAUK. Apparently a corruption of Meuntaukut, "at the fort." In a restricted sense this name is applied to that tribe which held the land from Easthampton (20) to Montauk Point and Gardiner Island. But owing to the fact that the Montauk chief was the leader of the confederation of tribes on the eastern two-thirds of the island, the name was often given to all the people in the confederacy. The main village of the tribe was on Fort Pond (21). The tribe was under the domination of the Connecticut tribes after 1641. About 500 survived the plague of 1658, but thereafter they rapidly declined. Today a very few mixed bloods still live near their old home.

NESAQUAKE or NISSAQUOGUE. A corruption of Nissaquack, "the clay or mud country." This tribe held the land from the center of the island to the north shore between the Nissequogue River (11) and Stony Brook (22). The main village was near the present Nissequogue (11).

PATCHOGUE or POOSEPATUCK or UNKECHAUG. 1. Pachau-auke, "a turning place." 2. "Where a creek flows out." 3. Ongk-adch-auke, "land beyond the hill." This tribe held the land from the center of the island to the south shore between Patchogue (23) and Canoe Place (24). Their main towns were at Patchogue (23), Fireplace (24), Mastic (25),

Moriches (26) and Westhampton (27). The Cannetquot were part of this tribe. A few mixed bloods still live on a small reservation near Mastic (25).

ROCKAWAY. A corruption of Rechqua-akie, "sandy land." This tribe occupied a strip running diagonally across the island from Long Island City (28) to Far Rockaway (29). Their principal villages were near the present Maspeth (30) and Rockville Center (17). Their lands were sold to the Dutch in 1685.

SECATOGUE. A corruption of Sequet-auke, "black or dark colored land." This tribe owned the land between the south shore and the center of the island between the present Islip (8) and Patchogue (23). The principal village was near Islip (8). The tribe was nearly extinct at the time of the white discovery.

SETAUKET or SEATALCOT. A corruption of Setukqt, "land at the mouth of a river." This tribe, said to have been one of the most powerful, occupied the land between the north shore and the middle of the island between Stony Brook (22) and Wading River (31). The principal town was on the site of the present Setauket (32), on Strong's Neck. By 1675 all its lands had been sold.

SHINNECOCK. A corruption of Shinne-auk-ut, "at the level land." This tribe held the territory between the Atlantic and Peconic Bay from Canoe Place (24) to Easthampton (20). A portion of the tribe weathered the storm of white invasion. In 1789 a number joined the Brotherton band of survivors of many New England tribes. Their descendants live today on the Oneida reservation in Wisconsin. Near Southampton (33) there are a small number of the tribe, much mixed with negro blood. Recent accounts state that the people have been slowly moving away, since twenty-eight of the men were drowned in a catastrophe at sea in 1876.

METOAC or MATOUACK. A corruption of Meht-anaw-ack, "land of the ear-shell or periwinkle." This is a collective name covering all the Indians on Long Island. The name is sometimes applied to the Montauk because of their supremacy over the other tribes.

SEWANHACKY "land of shell money." This name was applied to the western part of Long Island because of the great quantities of wampum which were made there.

PAUMANACK or POMMANOCK. A corruption of Pauman-auke, "land of tribute." A name for eastern Long Island, inspired by the fact that this area and its tribes were long under the control of the Connecticut Pequots and later of the whites.

Compiled by F. H. Douglas from the following sources:

ROBERT H. DODD, NEW YORK

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MUSEUM OF THE AMERICAN INDIAN, NEW YORK

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BUREAU OF AMERICAN ETHNOLOGY, WASHINGTON

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DENVER ART MUSEUM

DENVER, COLORADO

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NORMAN FEDER

Curator



MODEL OF A SHINNECOCK HOUSE

(American Museum of Natural History)

Leaflet No. 50 - June, 1932

LONG ISLAND INDIAN CULTURE

THE LONG ISLAND INDIANS were divided into thirteen tribes or bands, all belonging to the Algonkin linguistic stock. The bands were named as follows: Canarsie, Corchaug, Manhasset, Massapequa, Matinecock, Merrick, Montauk, Nesaquake, Patchogue or Poosepatuck, Rockaway, Secatogue, Setauket, and Shinnecock. All the Indians on the island were sometimes called by the general term Metoac or Matouack.

CULTURAL GROUPS. The Indians living on the eastern two-thirds of the island were related culturally and linguistically to the tribes of southern New England, such as the Pequot, Mohegan and Narragansett—see the map in leaflet 27-28. The bands on the remainder of the island were similar to the Delaware or Lenape Indians who held the New Jersey shore of New York Bay.

RECONSTRUCTION OF CULTURE is possible from information found in the writings of early Dutch and English explorers in which descriptions of the Staten Island and western Long Island Indians may be found. Other information is found in early accounts of the southern New England tribes, who were closely related to the Long Island peoples. Excavation of old village sites gives much light on many habits and crafts of these long vanished tribes. Finally some facts have been gleaned from the few survivors. This paper can only give a broad outline of known or highly probable facts, omitting many variations.

TRIBAL ORGANIZATION. Each tribe was under the leadership of a chief. The office was hereditary. If the male line failed a woman might hold the position. Matters pertaining to tribal policy and conduct were discussed at councils summoned by the chief, who ordered various persons to express their opinion of the business in hand. With the exception of the Canarsie and Rockaway, and possibly their immediate neighbors, the tribes were banded together in a confederacy under the leadership of the Montauk chief. This person was considered to be the ruler of the island, all other chiefs except those noted being his subordinates.

VILLAGES. The people lived in more or less permanent settlements generally located on or near the sea or on waterways leading to it. High, easily defended ground was favored. Excavations of old sites show that the dwellings were placed fairly close together, though without any regular arrangement. Often the villages were fortified, all or part of the houses being enclosed in a log stockade, made of upright poles planted close together in the ground. Each tribe had one or more of these strong places to which it could go in time of trouble. Villages were moved according to the kind of food most available in any one season, there being sites favorable for hunting, fishing and farming.

DWELLINGS. Except on the west end, where a house like that of the Iroquois Long House was also found, the people seem to have lived in domed wigwams. Poles were set about a circle from 10 to 20 feet in diameter and were bent and tied into intersecting arches. Several courses of horizontal poles were tied to the outside of this dome. The frame was covered with a grass thatch laid in courses beginning at the ground and tied to the frame. A smokehole with edges daubed with clay was left at the top. Thatching was also done with slabs of bark. An opening, closed with a skin, was left in one side for a door. A bench ran around the wall inside the room. In the larger houses partitions were sometimes built of wattling and thatch. The fireplace was in the middle of the floor. At the west end early visitors found a long narrow house of bark, about 60 by 15 feet, in which several families lived, each group having its own fire and section of the dwelling. Small domed sweat lodges were used.

CLOTHING. For men the essential garment was the breechcloth of skin and later of cloth, and for women a short skirt of the same materials. At the discovery both sexes wore skin robes and fur garments of several sorts. Turkey feather robes were worn. But after trading began cloth supplanted the aboriginal materials to a considerable extent. Moccasins and leggings were made of skin. All garments were decorated with fringes and beads, either of shell or glass. The men removed all their hair except for a central roach, while the women's hair was worn long and loose. Before the discovery the men seem to have trimmed their hair by singeing with hot stones. Deer hair roaches and strings of wampum were worn on the head. For decoration many beads were worn and much paint applied to the face, body and hair.

FOOD. Fish of many kinds, oysters and clams, crabs and other shell fish constituted the larger part of their diet. Though dead whales washed ashore were used, it is not known whether such large creatures were caught in the earliest times, as was done later. Fish were caught with nets and hooks. Meat came from deer, rabbit, raccoon, muskrat, beaver and perhaps wild cat and wolf. Wild turkey and other game birds were eaten, as were tortoises. Corn was cultivated and very probably beans and squash also. Various kinds of roots, berries and nuts were other kinds of vegetable food. Much foodstuff was dried for winter use. Food and other things were stored in pits in the earth.

COOKING was certainly done by boiling in pottery or soapstone vessels. Shellfish seem to have been cooked by steaming in pits. Corn was ground in wood or stone mortars and made into bread. Bowls, ladles and spoons of wood or tortoise shell were used for serving the meals.

TRANSPORTATION. There was much travel by water. The canoes were of two kinds, log dug-outs and bark—not birch bark, however. The dug-outs were made by burning and scraping away the interior of large oak or whitewood logs. They were as long as 40 feet, narrow and with sloping ends. They were propelled with wooden paddles. There seems to be no available information about the bark canoes except that they were small and fast. Land travel was on foot, burdens being carried in baskets supported by straps.

POTTERY. The clay was tempered with ground-up shell and then molded into vessels by the coiling method. The coils were smoothed out with small stones and bits of clam shell. Before baking the ware was decorated with simple patterns of dots and lines. These were applied by cutting with a sharp point, pressing with a stick or paddle wrapped with cord, pressing the round end of a stick against the clay and by drawing the edge of a scallop shell over the surface, thus producing from two to six parallel grooves. The latter method seems to have been restricted to the east end of the island. The cook pot was the common shape. It was somewhat egg-shaped, with a pointed base and slightly expanded mouth. At the west of the island, where Iroquois influence was felt, some pots showed the heavy neck rim characteristic of that race. The pots held from a few pints to several gallons.

BASKETS. During the last century certainly and perhaps earlier the Shinnecock Indians made baskets of oak and maple splints. Tall shapes were used for carrying and shallow ones for winnowing. Baskets of various kinds are described for the closely related Indians of Connecticut, so it is probable that the old Long Island peoples did this work.

STONEWORK. Stone of several varieties was chipped into arrow-heads, spear points, knives, drills and scrapers. White quartz was much

used in the eastern part of the island, where it was made into a triangular, stemless arrow-head peculiar to the neighborhood. Cutting and hammering were done with stone axes, both grooved and ungrooved—the latter form is called a celt—adzes and hammerstones. The latter are round flat stones with depressions pecked in the flat sides. Nothing but small articles could be cut with stone tools alone. If anything large was to be worked charring by fire became necessary. Food was ground in stone mortars with long stone pestles. Soapstone vessels were used but not made, being imported from Connecticut.

TEXTILES. Only a few charred bits of textile have been found. The imprint of woven cords on pottery is another indication that the art was practiced. Closely related tribes are known to have made bags, burden straps, belts, etc. All this work was in variations of the twined technic, that is having interwoven warp and weft.

MATS of reeds were made by the surviving Shinnecock and by many tribes of similar culture. Hence it is safe to suppose that the practice was followed by all the New England tribes.

BONE AND ANTLER. The bones of deer and less often of birds and small animals were made into awls for use in sewing skins, making baskets and bark vessels and perhaps for forks. Sections of deer rib were made into thin flat needles with a central eye for mat making. Some bone arrow-heads were made. Antler was made into arrow-heads, flint chippers, harpoons and fish hooks. Beaver teeth were used in wood carving. Deer leg bones were split to make draw shaves used in removing the hair from skins. Flat bits of bones were carved for pottery stamps.

SHELL was ground up for pottery temper. Large bits were made into pendants, scrapers, pottery smoothers and stamps. But little shell wampum was made before the discovery, but in later years Long Island produced great quantities of shell beads. For further information about wampum see leaflet 31.

METAL. A few bits of copper have been found, which must have been brought east from the Great Lakes region.

SMOKING. Tobacco or some substitute was smoked in clay and stone pipes of both the straight and elbow types. The clay pipes were often quite elaborately decorated with incised designs.

CUSTOMS. According to the early Dutch historians marriage was a simple affair of sale to the highest bidder. Divorce was easy. Polygamy was practiced by the wealthy men. The dead were buried along with their possessions for use in the after world to the west. Mourners painted the face black and visited the grave daily until the paint had worn off. Thereafter the visits were annual. The name of the dead was not mentioned. If this name was also the name of some object in common use a new word was invented for that object. Football and cards are mentioned as favorite amusements. Drinking was common and excessive after the discovery. The people are described as naive and generous but proud and untrustworthy, though the latter characterization should not be taken too seriously because of its source, the early alien invader. The men occupied themselves with war and the chase, except that when old they worked at various crafts. The women were eternally busy with household and family duties and with producing many sorts of handwork.

Compiled from the following sources by F. H. Douglas:

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2. The Lenape Indians of Staten Island—Skinner. *Anthropological Papers*, Vol. 3, Pages 29-61, 1909.
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DEPARTMENT OF INDIAN ART

RICHARD G. CONN, CURATOR

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FREDERIC H. DOUGLAS

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In this index the first number refers to the leaflet, and the second to the paragraph of the leaflet. These numbers are separated by a colon. If there are references in two or more leaflets they are separated by a semi-colon. References to two or more paragraphs in the same leaflet are separated by commas.

We regret that lack of foresight kept us from numbering the paragraphs. This will be done in all future issues.

Whenever the name of a tribe or town appears alone in the index it means that under the reference given will be found information as to the location, population, etc., of the tribe or town.

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ERRATA

The first number is the leaflet, the second, the paragraph of that leaflet, and the third, the line of the paragraph. B. indicates "Bibliography."

- 2: B: Jeançon for Jeancon
- 4: 3:12 insert comma after "cotton"
- 4: 1:13-14 "Shoshonean" for "Shoshohean"
- 8: 2: 3 "pinyon" for "pinon"
- 8:12: 1 "notably" for "notable"
- 10: 7: 8 "are" for "is"
- 13:10: 4 "cat's" for "cats"
- 16:10: 2 "cat's" for "cats"
- 18: 3: 5 Shung-opovi for Shimopovi
- 20: 2: 2 insert "a" before "type"
- 21: 2:10 Zuñi for Zuni
- 21: 8: 1 Zuñi for Zuni
- 22: 1: 1 "to" for "of"
- 22: 6: 1 Bigelovii for Biglovii
- 22: 9: 1 "was" for "were"
- 23:11: 1 Aht-sée-nah for Aht-see-nah
- 25: 6: 8 "others" for "other"
- 25: note on page 4: "chieftainship" for "chieftanship"
- 29: 8: 6 "stretched" for "stretched"
- 30:11: 7 insert comma after "jet"
- 31: 3: 9 Iroquois for Iroquoise
- 31: 6: 5 insert "the" before "ends"
- 31:14:18 Iroquois for Iroquoise
- 35: cover Frederic for Frederick
- 35: 3: 6 Pojoaque for Pojuaque
- 35: 3:13 Tesuque for Tesque
- 35: 6:15 "crumbly" for "crumby"
- 36: 7: 2 "extent" for "extend"
- 36:12: 9 "weft" for "waft"
- 36:16: 2 "appliqué" for "applique"
- 36:16: 2 "ribbons" for "ribbins"
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- 36:22: 9 "were" for "was"
- 40:16: 9 "equipment" for "equipment"
- 40:16:15 "mourner's" for "mourners"
- 41: 3: 8 "was" for "were"
- 41:22: 8 "gives" for "give"
- 47: 1: 2 "ten" for "eleven" (at end of line)
- 47: 2:12 "point" for "points"
- 47: 2:18 Zuñi for Zuni
- 47: 2:19 Zuñi for Zuni
- 47:15:10 "three" for "two"
- 49:13: 6 "often" for "ofen"
- 50:15: 3 Long Island for New England

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INDIAN LINGUISTIC STOCKS OR FAMILIES

POWELL'S CLASSIFICATION AND MODERN CHANGES
TRIBES, LOCATIONS AND POPULATION



LEAFLETS 51-52

JANUARY 1933

Reprinted July 1967

1. INTRODUCTORY. When the exploration of North America had progressed far enough for contacts with several tribes to have been made, it was discovered that all Indians did not speak the same language. This later became increasingly apparent and many of the various tongues were studied and noted down in the succeeding centuries. But no survey of the whole problem was made until 1836; when Albert Gallatin published a work on the subject. On the basis of this work further investigations were carried on which culminated in Powell's report in the 7th Annual Report of the Bureau of Ethnology, 1891. Powell divided the field into 58 linguistic stocks or families.

2. NUMBER OF DIALECTS. These 58 stocks were subdivided into at least 775 dialects. The largest stocks today have from 30 to 70 dialects, while many of the smaller ones consist of but one. Many of these dialects so closely resemble others in their stock that they are mutually intelligible, others are less closely connected and can only be understood with difficulty, and the remainder are so unlike that they cannot be understood at all by their linguistic relatives. Analogies in our own tongues are: first group above mentioned, English and American; second group, American and some English county dialect; third group, English and German.

3. POWELL'S LIST. Paragraphs 4-64 of this leaflet list the stocks in Powell's classification, including the general location of each stock, its main subdivisions and the approximate number of persons speaking its language. Population figures are very rough, being only for comparative purposes. Paragraphs 70-77 are devoted to changes in Powell's list.

4. ADAIZAN. This stock has been combined with the Caddoan. The dialect was spoken by the Adai, who lived in the Red-River district of Texas. The remnant, if any, is today with the Caddo in Oklahoma.

5. ALGONKIN. This is a very widely extended and numerous stock. On the western Plains are the Blackfoot, Arapaho, Gros Ventre or Atsina, and Cheyenne; central United States, Ojibwa, Pottawatomie, Menomini, Sauk, Fox, Kickapoo, Shawnee, Illinois, Peoria, Miami; all the New England tribes, see Leaflet 27-28; central Atlantic coast, Delaware; south Atlantic coast, Powhatan, Nanticoke and several vanished tribes; southern Canada, west to east, Cree, some Ojibwa, Ottawa, Algonkin, Montagnais, Naskopi. About 90,000 members of the stock are living today. See reference 3 for the grouping of the dialects.

6. ATAKAPAN. Spoken by the Atakapa or Attacapa of the Gulf coast of Louisiana and Texas. The stock is now extinct. See paragraph 74.

7. ATHABASKAN, DENÉ OR TINNEH. A large stock extending from Alaska south to Arizona. Central Alaska, Khotana, Ahtena and Loucheux; northwestern Canada, Yellowknife, Dogrib, Slavey, Chipewyan, Hare, Beaver; south of the above, Nahane, Tahltan, Sekani, Babine, Takulli, Carrier, Chilcotin, Sarsi; western Oregon, Umpqua, Coquille, Chasta Costa, Tututni, Chetco; northwestern California, Tolowa, Hupa, Chilula, Whilkut, Mattole, Nongatl, Lassik, Wailaki, Sinkyone, Kato; Arizona and New Mexico, Navaho and Apache. There are at least 75,000 living members of the stock, some 40,000 being Navaho. See paragraph 77.

8. BEOTHUKAN. Spoken by a now extinct tribe which lived in Newfoundland. See paragraph 77.

9. CADDOAN. Spoken by 3 groups: Arikara of North Dakota; Pawnee of Oklahoma, formerly of Nebraska; Caddo, Kichai, Towakoni and Wichita of Oklahoma, formerly of Louisiana and Texas. There were also many tribes, now vanished, in the southern area which spoke dialects of this family. About 2000 members of the stock still survive. See paragraph 77.

10. CHIMAKUAN. A small stock of northwestern Washington, consisting of the Chemakum, now extinct, the Hoh and the Quileute. Of the latter two about 275 survive, mostly Quileute. See paragraph 75.

11. CHIMARIKAN. A very small stock of 1 tribe, probably now extinct, formerly living on the Trinity River in northwestern California. See paragraph 70.

12. CHIMMESYAN. The Tsimshian Indians on the Nass and Skeena rivers in west central British Columbia make up this stock. They are divided into several groups and today number several thousand.

13. CHINOOKAN. This stock formerly lived along the lower Columbia River, up and down the coast from its mouth, and on the lower Willamette River. Only a few hundred survive. There were many small bands or tribes which are listed in reference 2 under the name.

14. CHITIMACHAN. This tribe and stock lived on the Grand River and Grand Lake in extreme southern Louisiana. A handful still are found in the neighborhood. See paragraph 74.

15. CHUMASHAN. One of the groups of the Mission Indians of southwestern California. There were at least seven dialects, which were named for the missions with which the groups were connected. There are a very few survivors. See paragraph 70.

16. COAHUILTECAN. This name is applied to the languages of a group of long vanished tribes which seem to have lived on the lower Rio Grande in Texas and Mexico. See paragraph 77.

17. COPEHAN. A stock of north central California, with two divisions, the Wintun and the Patwin. The Nomelaki are a branch of the Wintun. There are perhaps 1000 members of the stock. See paragraph 71.

18. COSTANOAN. This Mission Indian group lived along the California coast south of San Francisco. The stock was divided into bands named for the missions with which they were connected. The stock is nearly extinct. See paragraph 71.

19. ESKIMOAN. A large number of dialects of this stock are spoken by groups of Eskimo extending from eastern Greenland west across northern North America to eastern Siberia. There are about 30 000 members of the stock.

20. ESSELENIAN. A language, now extinct, spoken by a small group centering about the Carmelo Mission near Monterey, southern California. See paragraph 70.

21. IROQUOIAN. A large stock originally located largely in the neighborhood of New York state and in the southeast, but now considerably reduced and moved to other localities. In New York and the adjoining areas north and west were the 5 tribes of the Iroquois, Mohawk, Seneca, Onondaga, Oneida and Cayuga, the Huron, Erie, Neutrals and Tionontati or Tobacco nation. In Pennsylvania were the Susquehanna or Cones-

toga. In the south were the Cherokee and the southeast the Tuscarora, Nottaway and Meherrin. Today there are about 35,000 in the stock, in 2 main groups in New York and Canada and in Oklahoma. See paragraph 77.

22. KALAPUYAN. A stock formerly inhabiting the valley of the Willamette River in northwestern Oregon. There were a good many divisions of the stock. The survivors, less than 100, live mostly on the Grande Ronde reservation in Oregon. See paragraph 77.

23. KARANKAWAN. A stock which lived on the Gulf coast of Texas. Its exact extent and the names of its divisions are but little known. The language is now extinct. See paragraph 77.

24. KERESAN. A stock of the Pueblo Indians, located in northern New Mexico. Acoma and Laguna and their colonies, Cochiti, San Felipe Santa Ana, Santo Domingo and Tsia are the towns inhabited today. About 5200 Indians speak the closely related dialects of the stock. See paragraph 76.

25. KIWAN. This stock is confined to one tribe, the Kiowa, a southern Plains people now located in Oklahoma. The tribe numbers about 2000. See paragraph 76.

26. KITUNAHAN. This stock is made up of the Kutenai Indians, a tribe now living in southeastern British Columbia and the adjacent parts of Idaho and Montana. There are two dialects, Upper and Lower Kutenai. Some hundreds still speak the language.

27. KOLUSCHAN. This stock consists of the Tlinkit tribes of extreme southeastern Alaska. Between 3000 and 4000 members of the 16 divisions of the tribe are now living. See paragraph 77.

28. KULANAPAN. The Pomo tribes, in western California north of San Francisco, constitute this stock. There are 7 dialects of the language, which is spoken today by perhaps 1000 persons. See paragraph 70.

29. KUSAN. There is but one member of this stock, the Coos tribe, which formerly lived on and near Coos Bay on the Oregon coast. A very few survivors live on the Siletz reservation in Oregon. See paragraph 77.

30. LUTUAMIAN. There are two tribes in this stock, the Klamath and Modoc Indians of southwestern Oregon. The present population is about 1000. See paragraph 77.

31. MARIPOSAN. This stock lived in the San Joaquin valley in south central California. The stock is divided into about 40 dialects, some of which are still spoken by the few hundred survivors of today. See paragraph 71.

32. MOQUELUMNAN. This stock is restricted to the Miwok tribe of California. There are three divisions of the stock, the Coast and Lake divisions situated north of San Francisco, and the Interior division in the central part of the state, of which about 500 survive. See paragraph 71.

33. MUSKHOGEAN OR MUSKOGIAN. The leading stock of the Southeast, the surviving members of which today live largely in Oklahoma. At an earlier time the leading tribes were the Choctaw, Seminole,

Chickasaw, Muskogi, Hitchiti, Kaosati, Alibamu, Apalachee, Apalachi-cola, Mobile, Pensacola, Tuskegee, Cusabo, Yamasee, Natchez, Taensa and a large group of small tribes in Louisiana. The Creeks were the members of a confederacy of the Muskogi and allied tribes. The Seminole of Florida and Oklahoma are an offshoot of this organization. The first four groups listed survive today in considerable numbers, while the others have nearly disappeared. There are about 30,000 living members of the stock.

34. NATCHESAN. This stock on Powell's original list has long been included in the Muskhogean stock—see above. The language was spoken by the Natchez tribe which lived on the Mississippi River somewhat north of the Gulf. One or two persons still speak the language.

35. PALAIHNIHAN. This stock, made up of the Pit River tribes of northeastern California, has been combined with the Sastean or Shastan stock. About 1000 people speak the dialects of the stock.

39. PIMAN. The home of this stock is southern Arizona and northern Mexico. The American branches are the Pima, Papago and the now extinct Sobaipuri. There are about 11,000 living members of the stock in the United States. See paragraph 73.

40. PUJUNAN. The Maidu tribe of the eastern Sacramento valley in California is the only member of this stock. The 3 dialects are spoken by about 1000 Indians. See paragraph 71.

41. QUORATEAN. The Karok tribe of northwestern California makes up this stock. About 700 survive. See paragraph 70.

42. SALINAN. A practically extinct stock of the Mission Indians of southern California. There were at least 2 dialects. A very few are living today. See paragraph 70.

43. SALISHAN. A large stock with many tribes and dialects, grouped as follows: Interior Salish in southwestern Canada; Shuswap, Lilloet, Thompson River and Okanagan; in northern Idaho and Montana; Flat-head, Kalispel, Coeur d'Alene, Spokane and Methow; Coast Salish from north to south; Bella Coola, Comox, Cowichan, Nanaimo, a large group of small tribes in the neighborhood of Puget Sound, Quinault and Chehalis on the coast and Tillamook in northwestern Oregon. This is not a complete list. About 18,000 people speak dialects of the stock. See paragraph 75.

44. SASTEAN OR SHASTAN. A stock of northeastern California with 5 divisions, the Pit River group, the Shasta, the Konomihu, the Okwanuchu and the New River. All of these are practically extinct except the Pit River group of whom some 1000 remain. See paragraph 70.

45. SHAHAPTIAN OR SAHAPTIN. A stock centering in the middle Columbia River basin. The principal tribes are Nez Percé, Klikitat, Paloos, Tenino, Umatilla, Wallawalla and Yakima. There are other smaller subdivisions. There are at least 5000 people speaking the various dialects of the stock. See paragraph 77.

46. SHOSHONEAN. A very large and greatly subdivided stock of the western United States. Southern Idaho and adjacent areas, Shoshone and Bannock; western Utah, Gosiute; southern Utah, southern Paiute; southwestern Colorado and southeastern Utah, Ute; northern Arizona, Hopi; western Nevada, northern Paiute or Paviotso; southwestern Cali-

fornia, Serrano, Gabrielino, Luiseño, Cachuilla, Juaneño, and Cupeño; southeastern California, Panamint, Mono, Kern River, Kawaiisu and Chemehuevi; and on the southern Plains, the Comanche. There are about 18,000 members of the stock. See paragraphs 73 and 76.

48. SKITTAGETAN. The Haida Indians of Queen Charlotte Islands, off the coast of British Columbia, and the adjoining mainland, are the only members of this stock. There are about 800 living today. See paragraph 77.

47. SIOUAN. A very large and important stock, once located in 3 areas. In the southeast were a number of tribes which have now vanished with a few exceptions: Monacan, Manahoac, Tutelo, Saponi, Occaneechi, Woccon, Catawba, the only surviving tribe, Santee, Cheraw, Wateree, Congaree, Pedee and perhaps several other extinct groups. In Louisiana were the Ofo and Biloxi, of whom perhaps a handful survive. In the west are the 7 tribes of the Dakota, the Assiniboin, Crow, Hidatsa, Mandan, Winnebago, the Chiwere dialectic group of the Iowa, Oto and Missouri, and the Dhegiha dialectic group of the Omaha, Ponca, Kansa, Osage and Quapaw. About 40,000 persons speak dialects of the stock.

49. TAKILMAN. This stock contains only the Takelma tribe once located on the Rogue River in southwestern Oregon. There may be a survivor or two on the Siletz reservation. See paragraph 77.

50. TANOAN. A stock of Pueblo Indians of New Mexico. There are 3 divisions: Tewa, spoken at the pueblos of Nambé, San Ildefonso, San Juan, Santa Clara and Tesuque; Tigua or Tiwa, spoken at Isleta, Picuris, Sandia and Taos; Jemez spoken at the pueblo of that name and formerly at Pecos, now abandoned. There were once 2 other groups, the Tano and Piro, but these dialects are now extinct, though some people remain. See paragraph 76.

51. TIMUCUAN. This stock is now extinct. It consisted of the tribes of Florida, excluding the Seminole who entered the state long after all the Timucuans had perished.

52. TONIKAN. A stock represented today only by the Tunica, a tribe of the lower Mississippi. A few speakers of the language may still survive near Marksville, Louisiana. Formerly there were 4 other tribes speaking dialects of this stock, Yazoo, Koroa, Tiou and Grigra. See paragraph 74.

53. TONKAWAN. The Tonkawa Indians, once of central Texas but now in Oklahoma, make up this stock. A few dozen survive. See paragraph 77.

54. UCHEAN. The Yuchi tribe, which lived on the Savannah River in Georgia, until removal to Oklahoma, is the only representative of this stock. A small number still live among the Creeks and Shawnees in Oklahoma.

55. WAILATPUAN. There are two members of this stock, the Cayuse and the Molala of the Cascades section of the Columbia River. The survivors of the two tribes, who number less than 100, live on the Umatilla reservation. See paragraph 77.

56. WAKASHAN. There are 3 main divisions of this stock, the Makah of Cape Flattery, Washington, the Nootka of southern Vancouver Island, and the Kwakiutl of northern Vancouver Island and the adjoining main-

land. There are many subdivisions of these groups. There are perhaps 4000 members of the stock today. See paragraph 75.

57. WASHOAN. A stock represented by but one tribe, the Washo of west central Nevada and the adjoining part of California. There are about 600 members of the tribe. See paragraph 70.

58. WEITSPEKAN. A single tribe, the Yurok, makes up this stock. It is located in northwestern California. About 700 survive. There are 4 dialects. See paragraph 72.

59. WISHOSKAN. The Wiyot tribe of northwestern California is the only member of this stock. About 100 survive. See paragraph 72.

60. YAKONAN. This stock lived on the Oregon coast between the Umpqua and Yaquina Rivers. The very few survivors are on the Siletz reservation. There were 4 tribes, Yaquina, Alsea, Suislaw and Kuitsh. See paragraph 77.

61. YANAN. A stock of central California with 4 dialects, Gari'i, Gata'i, southern Yana and Yahi. A few dozen survive. See paragraph 70.

62. YUKIAN. A small stock in 3 areas in northern California. There are 4 divisions, Yuki, Coast Yuki, Wappo and Huchnom. About 150 speakers of these dialects survive.

63. YUMAN. A considerable stock located principally along the course of the lower Colorado River. In Southern California are offshoots, the Diegueño, and Kamia. Along the Colorado or nearby are the Cocopa, Havasupai, Maricopa, Mohave, Walapai, Yavapai, Yuma and Yuma-Apache. There are about 4000 members of the stock. See paragraph 70.

64. ZUÑIAN. This stock is found only at the pueblo of Zuñi in west central New Mexico. The population is 1950. See paragraph 76.

RECENT CHANGES IN POWELL'S LIST

65. REGROUPING OF STOCKS. Ever since the publication of Powell's list linguists have been making more or less detailed studies of the languages included in it. These studies have resulted in a very considerable reduction in the number of stocks. Some of these reductions are accepted by all students, while others are disputed by some.

66. CHANGES IN STOCK NAMES. Powell was inclined to give manufactured names to many of the stocks, especially the smaller ones. Many of these were cumbersome and unintelligible to all but close students. The modern tendency is to call these small stocks by the name of the tribe speaking the language. Thus the Quoratean stock is now usually called the Karok stock.

67. NEW STOCK NAMES. For some of the recent stocks made up of many old ones it has been necessary to invent names, such as Hokan and Mosan, but wherever possible the name of the dominant tribe with the suffix-an has been used.

68. NUMBER OF STOCKS TODAY. Owing to the disagreement about some of the modern combinations it is impossible to give the exact number, but 30 is somewhere near.

69. NUMBER OF DIALECTS TODAY. The lack of complete data make it impossible to more than guess at this figure. An estimate often given is 600.

70. HOKAN. This group of California stocks formerly considered to be independent contains the Quoratean (Karok), Chimarikan/ Shastan, Yanan, Kulanapan, (Pomo), Washoan, Esselenian, Yuman, Salinan and Chumashan tribes.

71. PENUTIAN. A group of California stocks once considered to be independent. It contains the Moquelumnan (Miwok), Costanoan, Mariposan (Yokuts), Copehan (Wintun) and Pujunan (Maidu).

72. WEITSPEKAN (YUROK) AND WISHOSKAN (WIYOT). These two stocks are considered by some linguists to belong to the Algonkin stock. This conclusion is the subject of much debate.

73. UTO-AZTECAN. The Piman and Shoshonean stocks, together with the Nahuatl stock of Mexico, are now grouped together under this name. See paragraph 76 for additional discussion.

74. TUNICAN. The Tonikan, Atakapan and Chitimachan stocks have recently been found to be sufficiently closely related to warrant grouping them under one name.

75. MOSAN is the name applied to a new stock formed by grouping Salishan, Chimakuan and Wakashan.

76. KIOWAN AND TANOAN have been found to belong to the same stock. Still more recent investigation seems to show that all the Pueblo languages are related, thus throwing Kiowan, Tanoan, Keresan, Zuñian and Shoshonean into one group. As Shoshonean is now in the Uto-Aztecan stock, the others presumably follow it. Available information does not indicate the name for this new grouping.

77. ADDITIONAL GROUPINGS suggested are: Iroquoian and Caddoan; Athabaskan, Koluschan (Tlinkit) and Skittagetan (Haida); Coahuiltecan, Tonkawan and Karankawan; Takilman (Takelma), Kalapuyan, Kusan (Coos) and Yakonan; Sahaptin, Wailatpuan and Lutuamian. Beothukan may be Algonkin.

78. SAPIR'S CLASSIFICATION Edward Sapir has proposed an arrangement of all stocks into 6 groups. This plan is outlined on page 139 of reference 6.

79. LANGUAGE AND CULTURE The fact that two tribes in separate areas speak closely related languages does not mean that their social organization, arts, clothing, food, etc. are alike. The culture of a tribe depends on its environment and not on its linguistic relationships. Thus both Hopi and Comanche are Shoshonean, but the former is a town-dwelling tribe with elaborate social and religious organization, while the latter is a nomadic hunting tribe of the plains, with a simple type of culture.

80. CHARACTER OF LANGUAGES For discussions of the various types of Indian languages, their grammatical structure, etc., see reference 6 and the article "Languages" in reference 2.

81. MAP Powell's original map appeared in reference 1. A revision to 1912 appears in the 1st volume of the second edition of Bulletin 30. The revision to 1915 was published separately.

Compiled by F. H. Douglas from the following sources:

BUREAU OF AMERICAN ETHNOLOGY, WASHINGTON.

1. Indian linguistic families of America north of Mexico—Powell. 7th Annual Report 1885-86. Published 1891.
2. Handbook of American Indians. Bulletin 30, 1907-10.
3. Preliminary report on the linguistic classification of Algonquian tribes—Michelson. 28th Annual Report 1906-7. Published 1912.
4. Handbook of the Indians of California—Kroeber. Bulletin 78, 1925

UNITED STATES BUREAU OF THE CENSUS.

5. Census of 1910: Indian population in the United States and Canada. 1915.

ENCYCLOPEDIA BRITANNICA.

6. Central and North American languages—Sapir. 14th edition, volume 5, pages 138-141.
7. Articles on many of the leading stocks. See index of the work.

A bibliography of Indian linguistics would be immense. Consult the publications of the Bureau of Ethnology, the American Anthropological Association, the American Ethnological Society and the University of California for many works on the subject.

DENVER ART MUSEUM

1300 LOGAN STREET, DENVER, COLORADO

DEPARTMENT OF INDIAN ART

FREDERIC H. DOUGLAS, CURATOR



MODERN PUEBLO POTTERY TYPES

LEAFLETS 53-54
FEBRUARY 1933

4th Printing, March, 1945

1. INTRODUCTORY. After the invention of pottery toward the end of the period of pre-history called Basket Maker 3, perhaps 1600 years ago, the art spread extensively all over the Southwest. Until well after the Spanish conquest of 1540 the tendency was for the workers in large areas to make one or more kinds of pottery which were characteristic of each area. Each town did not have its individual ware, but produced pieces which resembled those made elsewhere in the area. Exceptions of course existed.

But after the re-conquest of 1690-1700 a new condition arose. Each of the towns which survived the fighting began to make a kind of pottery peculiar to itself. The descendants of these wares are the ones we see today. 18 groups are now making pottery which is to some extent decorated. Undecorated cooking ware is made in nearly all the towns.

This leaflet attempts to give a little information about each of the decorated wares made today. Owing to the limitation of space, unusual forms and designs cannot be discussed.

2. INFORMATION ABOUT THE PUEBLOS, such as location, population and historical notes can be found in double leaflet 45-46.

3. SYMBOLISM, which is the use of design elements to represent ideas, seems not to have existed on very early pottery. From the 14th century on pottery decoration came more and more to be connected with the idea that if objects and forces in nature are drawn on man's handiwork, he will be able to control these forces and objects. As rain was the greatest necessity in the Southwest, most designs which were not purely decorative were made from natural things connected with rain. Heavenly phenomena and earthly creatures who have to do with water form the large proportion of such designs. How much of this old rain symbolism is found on the pottery of today is difficult to say. It certainly exists on pieces used in the ceremonies, but they are rarely seen. The everyday household pottery and that made for sale only are now produced with apparently very little regard for symbolism, the decorations being merely combinations of elements which the practice of several generations has made popular at each pueblo.

4. MIXTURE OF STYLES. Centuries of intermarriage and of visiting between towns has resulted in considerable mixing of design types. Sales of the wares of a town specializing in pottery have helped in this diffusion of patterns. Elements peculiar to a strong pottery making town can be seen on many other kinds of wares. Therefore design alone is not a sufficient guide to identifying a pot. Shape, thickness, clay color, and weight must also be considered.

5. SLIP. This word, which is used frequently in the following paragraphs, means the thin mixture of clay and water which is rubbed over the pottery before the designs are painted on to form a smooth, colored background.

6. DETAILS OF POTTERY MAKING will be found in leaflet 6.

7. ACOMA pottery is the thinnest and lightest in weight of all modern wares. Even if the design gives no clue to the type, it can be distinguished by its delicacy. The base is red to dark brown, the slip is white to yellow-cream. The designs are executed with black, yellow, orange, red and brown paints. The whole area from neck to near the base is usually the design field, though sometimes the neck is considered separately. The design type which is most characteristic of the town is the geometric (A). The entire surface of a piece—always excepting the base—is covered with a profusion of angular and curved forms. Main construction lines can be seen after study, but are not immediately apparent. The second most common type has been influenced strongly

by Tsia. Birds and flowers rule in this class (B). The birds have curving parrot beaks, single or double uprising wings and a few thick tail feathers. Another bird form is copied from the roadrunner. These creatures have small heads on short necks, round bodies with elaborate tails, and short legs. Both bird forms are always in profile. There are usually two birds on a pot, though sometimes three or four, and they are often set beneath a broad curving band, or above and below a band drawn in deep waves. Realistic flower and leaf forms are usually drawn with the birds. Both of these design types have been developed in the last 50 years. Pieces collected in the last century show massive decorations covering only a part of the surface.

The commonest shape is the water jar. Other varieties are small jars and pots, large storage jars, and vases with necks and side handles. Small to medium bowls are not uncommon. Today small jars and bowls, candlesticks, ash trays, etc., are made in quantity for the tourist trade.

8. COCHITI. The best indication of Cochiti pottery (C) is the type of design. The otherwise universal taboo against religious symbols on secular pottery does not hold at this pueblo. The symbols of fertility—such as corn and other plants, clouds, rain and lightning, leaves and checkered fields—strange and impossible birds and occasional human and animal forms are the elements of Cochiti design. Plants with clouds for flowers and birds with clouds on wings and tail are common. The cloud designs are from two to several dozen inverted half circles set in rows above or below a line. If more than two are used they are piled up in a pyramid. Cochiti greatly favors the multiple cloud, which looks like a mass of small soap bubbles. Rows of parallel vertical lines pendant from a horizontal bar are nearby rain, and heavy Y-shaped marks with extremely long tails are distant rain. Solid rectangular figures with steps on one side are much used. They are often painted in pairs. Large unsymmetrical designs occur quite often. Areas of black are frequently pierced with narrow leaf-shaped openings.

The designs are likely to be very carelessly executed, and the arrangement of the elements on a pot is usually uneven and rather haphazard. The use of long, thin elements moving somewhat eccentricly over the surface gives Cochiti design a noticeably "spidery" character.

The base is light tan with a red ring at the top. The slip is yellowish-white if the piece is old and a very light cream-grey in the case of new work. Small food bowls are often a light chocolate brown. Shallow and deep bowls, water jars, large storage jars, and small containers molded in bird and animal forms are the common shapes. Quite large realistic human figurines are a speciality of the town. Bowls are painted on both outer and inner surfaces, other shapes on the outside only.

9. HOPI. For details about the manufacture, history, etc., of this type of pottery, see leaflet 47.

The color of the background is the most outstanding feature of this ware. It ranges from a light cream through yellow and orange to red. Most pieces show these colors in spots gradually shading into each other. This type is unslipped. There are wares with dark red and white all-over slips. The vast majority of the designs are highly conventionalized birds or parts of birds executed in brown-black and red. Masked kachina figures or their masks alone are common on small flat tiles, and appear occasionally elsewhere. Hatching and various geometric designs are used as space fillers. Shallow wide bowls (D) and flattish, wide-shouldered water jars (E) are the most common shapes. Bowls have the principal design on the inside. Recently very tall, slender jars have been made. The flat tiles (F) mentioned above were made in the last

century, died out, and are now being made again. Square and round dippers (F) are made. The pottery is quite thick and soft.

10. ISLETA. The pottery made at Isleta up till about 1880 was plain red. At the time mentioned above people from Laguna moved to Isleta and introduced the present style. Today pottery making is principally devoted to the production of countless poorly made bits of bric-a-brac for the tourist trade. Such pieces as have some pretense to artistic worth have an all-over white slip bearing decorations in red and black. The slip even covers the bottom of the pieces. It is inclined to wear off. The designs are heavy and staring. They are conventionalized plant forms and geometric elements in about equal proportion. There is much heavy hatching. The interior of the deep bowls (G), the most common shape if the bric-a-brac is not considered, is tan with a red band just below the rim. Sometimes the whole interior is red. The ware is of medium thickness. Pieces of pottery signed M. C. on the bottom are the work of Maria Chiwiwi, the best Isleta potter of today.

11. JEMEZ. The small amount of modern pottery which has come from Jemez is the result of a very recent and not very widespread revival. Only a few pieces are available for study. The ware is thick and extremely heavy. A rather slender water jar (H) is seemingly the only form made. There is a broad red base, above which is a yellow-white slip painted with heavy black and red designs of a geometrical nature. Stepped blocks, checks and parallel rows of lines seem to be favored.

12. LAGUNA pottery so closely resembles that from Acoma that its recognition depends on the thickness of the ware, which is much greater at Laguna. The design types are so much alike that until further analytical studies are made no distinguishing points can be seen. There seems to be a leaning toward a tall, narrow shape (J) for the water jar. Pottery making is almost dead at Laguna and its colonies, so that there is little on which to base descriptions except pictures of collections made years ago. These show many animal and eccentric shapes, evidently a speciality of the pueblo in those times.

13. NAMBE. From the very few available specimens it appears that Nambe pottery is an inferior grade of all-black ware. It looks like badly made Santa Clara pottery.

14. PICURIS pottery is not painted, but its color is so attractive that it is included here. It is made from a mica-bearing clay that burns a rich glittering tan, irregularly and handsomely spotted with black from contact with the flames in firing. The ware is hard and thin and gives a fine clear ring when struck. The most characteristic shape is a deep, wide-mouthed cook pot (K). This is often decorated with a wavy clay molding around the neck, and with small loop handles. The molding is an adaptation of Apache technic. Other shapes seen are vases with long double or single necks.

15. POJOAQUE. The very few pieces known to have come from this now abandoned pueblo indicate that an inferior grade of black pottery was made.

16. SAN ILDEFONSO. In variety of wares this pueblo leads the field. Until about 1915 five types were made. Of these, plain polished black and polished red were the oldest. The colors cover the entire surface. The commonest shapes were large storage jars and mixing bowls. These wares look so much like those made at Santa Clara that no way of distinguishing them can be given. This statement does not apply to modern polished black ware, which can very easily be recognized. The third variety is black on buff or cream, the commonest ware of the last century. This has a tan base, a cream slip and

deep black designs. The shapes most seen are ceremonial bowls with terraced rims, globular water jars (L) and large, small-mouthed storage jars. Geometric figures and conventionalized plant forms of a rather large size are somewhat poorly painted and loosely organized. There is a considerable likeness to Cochiti work.

The fourth variety is called polychrome. It flourished in the last century, but is rarely made today. It has a tan base with a red band at the top, and a light cream slip decorated with figures in red and black. The red has a considerable leaning toward purple which is peculiar to this ware. The designs show geometric figures, conventionalized plant forms and very striking birds with highly fanciful flowing tails, wings and crests. Water jars (M) and bowls are the shapes of the older ware. Modern potters have made a great variety of shapes for sale. The fifth of the older types is black on red (N). The base is tan and the slip a dark polished red. The designs, executed in deep black, are rather massive geometric and conventionalized figures. They are united around the rim and flow down over the sides from this common starting point in several large units.

About 1915 a spirit of change swept over the town and a number of new types were invented. From this unsettled period emerged the dominant type of today, the highly polished black with dull black designs (O). This ware, invented about 1919 by the celebrated Maria and Julian Martinez, is the Pueblo pottery best known today to the world at large. Even when undecorated it may easily be distinguished from other black wares by the almost mechanical perfection of its smoothness and by the brilliance of its polish. When decorated it is unmistakable, the dull black and shiny black combination being unlike any other ware. The designs are mostly angular geometric figures executed with matchless perfection by men painters, a very unusual thing in itself. A variation from the angular style is the gracefully flowing form of the plumed serpent which appears on many pieces.

Other varieties which have been made in recent years are white on red, pink outlined with white on red, and black and white on red. In 1931 Rosalie Aguilar invented a new style which has the designs carved in low relief. The color is polished black. Most of the pottery made today is signed on the bottom with the first name of the maker.

All types of San Ildefonso pottery are rather heavy and thick and when struck give out a dull "wooden" sound.

17. SAN JUAN makes two wares, polished red and polished black, of which the former is the most favored. The deep bowl, usually quite large, is the most common article made. It has a polished red slip extending from the rim down over the shoulder. Below this is the natural tan of the unslipped clay. One type has a narrow concave band of red (P) and another a much broader convex section (Q). Both are without decoration. The polished black (R) may be distinguished from other wares of this color by the fact that the black does not cover the whole surface, but only extends from the rim to a little below the shoulder. The remainder is a dull brown-black. The polished black also shows a brown cast. Jars of several sizes are the common shapes in the black ware.

A very recent innovation at San Juan is a light brown ware in which geometric and floral designs are scratched with a sharp point. This is a modern adaptation of a prehistoric type once made in now ruined towns on the Jemez plateau near San Juan.

18. SANTA ANA. Pottery has been made to a very limited extent at this town in recent years. Surviving pieces from busier times are very scarce.

They show a much worn light slip decorated with red and black. The character of the red designs is the best guide to identifying Santa Ana pottery. They are very broad bands arranged in massive curved and angular patterns. Considerable sections of these bands do not have the black edging which is almost universal elsewhere. The all-black or mixed black and red designs are more complex, with smaller lines and more intricate curves. Many of these latter figures resemble those made at Tsia. Small white circles within black or red masses are common. The usual shapes are deep bowls and water jars (S).

19. SANTA CLARA. Polished black is the common ware at this pueblo. The surface of the pieces is somewhat rough, the shallow corrugations made by the pottery scraper being quite apparent. The color covers the entire surface and is likely to have a slightly bluish tinge. The only decorations are bands and bumps, dents and gouges, raised above, or pressed into the surface. Swastikas and conventionalized bear's paws are indented. Water jars (T) with rather flat bodies, tall necks and flaring rims; large, globular, small-mouthed storage jars; very large deep bowls; and vases (U) with slender double necks connected with a handle are the ordinary shapes. Small vases suggesting those of ancient Greece, and little animal figurines (V) are much made today. Very recently it has become popular to paint the black ware with bright orange designs executed with commercial oil paint after firing. Red ware is sometimes made. It so closely resembles that of San Juan that no way of distinguishing it can be given. For a more extensive description of Santa Clara pottery see leaflet 35.

20. SANTO DOMINGO. Character of design gives the clue to recognizing this pottery, at least in its most characteristic forms. Uninfluenced Santo Domingo pottery shows black geometrical designs on a light cream ground. They are made by drawing bands of squares or rectangles and then cutting off the corners of these shapes with angular or curving masses of solid color. If the angles are used we see polygons of cream surrounded by black triangular shapes, and the curves make irregular ovals of the light color similarly enclosed by black. By dividing the squares into smaller spaces with single or double lines endless combinations of this nature are made. Other designs are massive plant forms, both realistic and conventionalized. A design roughly suggestive by its threefold form of the fleur-de-lis is often seen. Strange birds much resembling those of Cochiti are quite common.

Black on red pottery has been made in small quantities. It has the geometric designs described above. In recent years black and red on cream has almost entirely supplanted the older ware. Flowers and birds make up most of the patterns on this modern pottery (W). In artistic worth it is far below the older variety.

Around the turn of the century a potter at Santo Domingo invented a new style which has not been made since 1915. The ordinary color scheme is reversed, the normally light portions being painted black or red and vice versa. Thus we see on these pots red or black polygons outlined in cream (X).

The most characteristic Santo Domingo shape is shown in the picture (Y). Large, small-mouthed storage jars, and bowls of several sizes are also common. The modern ware for the trade is made in every sort of shape.

21. TAOS pottery is the same in appearance as that made at Picuris. Larger pieces seem to be made at Taos. Sometimes the ware is smeared with pitch to waterproof it. This makes the usually glittering surface a dull dark brown.

22. TESUQUE. Until quite recent times it was supposed that the only pottery made at Tesuque was in the form of the little seated human figures

called "rain gods" (Z). But it has been discovered that formerly a very distinctive kind of good pottery was once made there. The black designs are painted on a light yellow-grey slip. Red is used very rarely. The pottery is of medium thickness. The most characteristic design appears in the picture (AA). The decorations, drawn with a thick black line, are simple and regular geometrical figures and conventionalized plant forms. Curves are more used than angles. Borders with simple repeated figures occur very frequently. Large designs are likely to be surrounded with wavy lines or rows of dots, or to have dots or little spurs set along them (BB). Pointed ovals with a wavy line down the center are quite common. Bowls, jars, and pieces with side and top handles are made. This old style pottery joins Santa Ana in being the rarest of all modern Pueblo pottery.

Today little bowls, ash-trays, bird-shaped dishes, etc., are made for the tourist trade in addition to the rain gods. They are a grey-tan in color and are painted with red, blue and yellow commercial colors after firing.

23. TSIA, SIA or ZIA. Pottery from this pueblo is very hard to describe briefly owing to the great variety of design. The ware itself is the best guide. It is thick and moderately heavy and is made of red clay, the color of which shows at a break. The base is red, the slip is white and the designs are in red and black or black alone. The slip is rather impermanent and either wears thin or darkens. Recently a yellow slip has been in fashion. Large storage jars, water jars, large and small bowls, canteens and small flat tiles are the common forms. The tiles are a new departure.

The Tsia bird is distinctive (CC). It has a small head with a thick, wedge-shaped bill, long neck, round body, single upraised wing, a few big tail feathers and long slim legs. Its color is red or yellow. Realistic deer are drawn. Broad, double red bands laid in big curves are common on water jars. Realistic plants with black leaves and red flowers and berries are very often arranged in graceful sprays. In the non-realistic field we find an elaborate long rectangle set on a bias, with big single hooks curving in opposite directions from the ends (DD). This design is usually black. Large leaf forms with a heavy outer border and a dotted interior frequently occur, as do broad stubby bands in parallel sets and slender, curving triangles in red, black or hatching. Broad, curving meanders are found. A few pieces have been made with horizontal bands of red and yellow squares set cornerwise.

Rich color, solid, well conceived decorative compositions and strong design elements are the rather indefinable features of this pottery. Tsia has long been a pottery supply depot for many nearby pueblos, so its wares are found everywhere and have strongly influenced designers in neighboring villages.

24. ZUÑI. Color and design are the best helps in recognizing Zuñi pottery. The slip is a clear white which darkens with age. It has the appearance of being thick and heavy. On it are painted designs in a dark brown-black and a medium red. The red is used much less than the brown. The base is a dark brown or grey, almost black. On water jars, at the bottom of the slip, there is often a bulge left by the starting mold and never smoothed out. The ware is rather thick and shows dark grey to black at a break. The pieces are very likely to be poorly shaped, perfectly molded vessels being quite rare. Water jars (EE) and large and small bowls are the common forms. The latter are painted inside and out.

Zuñi design has an architectural character not found elsewhere. The design field is strongly marked off into sections within which the designs are placed. The commonest elements, executed in brown-black with slight red trimmings, are deer, crudely drawn and showing a red line from mouth to heart and a white

spot on the rump (FF); little squatty birds with long elaborate tails; large flower-like discs or rosettes (FF); and large hooks with long triangular points on the outside of the curve (EE). The birds are placed in a narrow band running horizontally around the jars below the shoulder. The flowers stretch from neck to base, intersecting the bird band, and the hooks are set in the sections above and below the birds. The deer are placed similarly in relation to the bird band. They are set beneath arching bands trimmed with triangles and crooks.

The neck is not included in the design field except in some recent types. It is decorated with either simple repeated figures or with quite elaborate geometrical organizations. A common type of the latter is a diamond set in a frame of interlocking triangles and hooks, with figures somewhat like automobile bumpers at the ends. This design is also often placed in a vertical position on the body in place of the big flower. Areas and bands of coarse hatching outlined by heavy dark lines are much used. Little crooks blossom out everywhere. On the recent types mentioned above the designs are mostly hooks, feather-like figures and geometric patterns grouped around the rim and flowing down over the body.

Dippers and bowls with terraced figures cut on the rims and painted with frogs, tadpoles, dragonflies, butterflies, heavenly phenomena and corn are pieces made for ceremonial use. They often have semicircular handles. Small jars for the same purpose often have quite realistic frogs, sometimes green, modeled on the surface just below the rim. Pottery owls (GG) are a specialty of the town. Formerly a black on red ware was made and very recently some pieces have appeared with a tan slip.

Poorly modeled pottery with a dark grey-brown base, thick white slip and rather sloppily executed brown-black and red designs arranged in clearly marked sections and of the types described above is sure to be from Zuñi.

Compiled from the following sources by F. H. Douglas;

1. Study of the pottery collections of the Denver Art Museum and of the Laboratory of Anthropology in Santa Fe.

COLUMBIA UNIVERSITY

2. The Pueblo Potter—Bunzel. 1929.

PHILLIPS ACADEMY, ANDOVER, MASSACHUSETTS

3. Pueblo Pottery Making—Guthe.

AMERICAN MUSEUM OF NATURAL HISTORY, NEW YORK

4. Pottery of the Southwestern Indians—Goddard. Guide Leaflet 73.

BUREAU OF AMERICAN ETHNOLOGY

5. The Zuñi Indians—Stevenson. 23rd Annual Report.
6. Illustrated catalog of collections obtained from the Indians of New Mexico and Arizona in 1879—Stevenson. 2nd Annual Report.
7. Illustrated catalog of collections obtained from the Indians of New Mexico in 1880—Stevenson. 2nd Annual Report.
8. Illustrated catalog of collections obtained from the Zuñi and Hopi in 1881—Stevenson. 3rd Annual Report.

Acoma, 2, 6; Cochiti, 6, 7; Hopi, 2, 4, 6, 8; Jemez, 6, 7; Laguna, 4, 6; Nambé, 7; Pojoaque, 7; San Ildefonso, 2, 3, 4, 7; San Juan, 6, 7; Santa Ana, 7; Santa Clara, 6, 7; Santo Domingo, 4, 6, 7; Taos, 7; Tesuque, 6, 7; Tsia, 2, 4, 7; Zuñi, 2, 4, 5, 6, 7, 8.

Thanks are due to Kenneth Chapman and Dr. Harry Mera of the Laboratory of Anthropology for their revision of this leaflet.

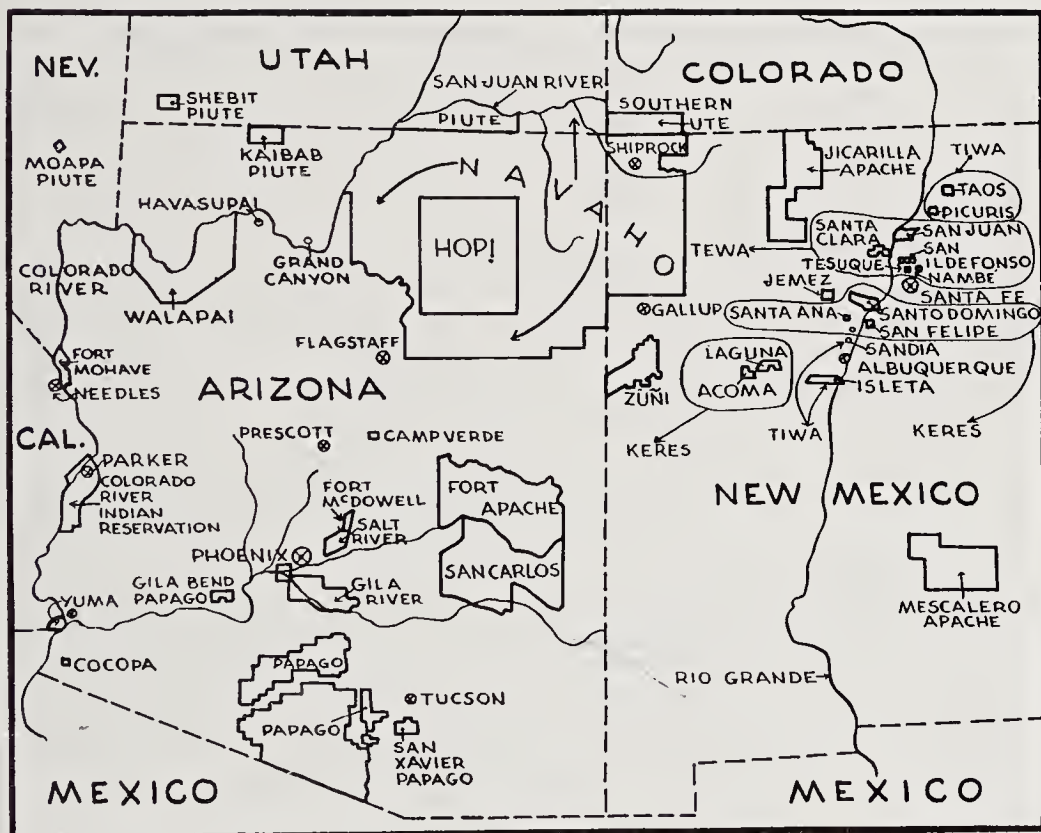
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TRIBES OF THE SOUTHWEST

Reprinted July 1967



LEAFLET 55

MARCH, 1933

2nd Printing, December, 1937

1. SOUTHWEST in this leaflet is considered to mean the states of Arizona and New Mexico and parts of Utah, Nevada and California lying just across the border line with Arizona.

2. TYPES OF CULTURE are so extremely varied in this area that not even brief summaries can be given in this leaflet. For information about various phases of these cultures see the leaflets in this series referred to at the ends of the paragraphs.

3. APACHE (Ah-páh-tchee). The name applied to a number of groups of Indians of Athabascan stock. The name is said to be derived from Zuñi "apachu", meaning enemy. The people call themselves N'de, Dine, Tinde or Inde, all meaning "people". These groups formerly ranged all over southern and central Arizona, eastern New Mexico and the plains of west Texas. They are now located as follows: Fort Apache reservation, part of the Mimbrenño, Mogollon, Pinalenño, Chiricahua, and Arivaipa bands; San Carlos reservation, the remainder of the Mogollon, Pinalenño and Arivaipa, all the Coyotero and part of the Chiricahua and Tonto; Fort Sill, Oklahoma, the remainder of the Chiricahua; Camp Verde and Fort McDowell reservations, the remainder of the Tonto; Mescalero reservation, all of the group of that name, the Lipan and the remainder of the Mimbrenño; Jicarilla reservation, all of the group of that name. The Mescalero and Jicarilla are treated separately in this leaflet. The total population of all the groups is about 7500. Leaflets 16 and 64.

4. CHEMEHUEVI (Tche-me-hway-vee). A name of unknown meaning and of Yuma or Mohave origin applied to the Paiutes of southeastern California. The native name is Nüwü, meaning "people". The stock is Shoshonean. The tribe recently lived on the Colorado river in the neighborhood of Parker, Arizona, and Needles, California, having moved there from farther north. The population is about 300.

5. COCOPA (Kó-ko-pah). A corruption of the native name Kwikapa, of unknown meaning. A Yuman tribe living in northern Lower California on the Colorado river delta. Several hundred have crossed into Arizona in recent times and now live near Yuma, Arizona.

6. HALCHIDOMA* A corruption of the native name Halytciyihoma of uncertain meaning. A tribe of Yuman stock which once held the Colorado River between the Yuma and the Mohave. About 100 years ago the tribe was broken up by fighting with neighboring tribes. The survivors fled to the Maricopa and their tribal identity was completely lost. Some survivors of Halchidoma blood still exist but nothing can be said about their numbers.

7. HAVASUPAI (Ha-va-sóo-pie). A small tribe of Yuman stock living on a reservation centering about Cataract Cañon, a gorge entering the Grand Cañon from the south about 30 miles west of the railroad terminal on the south rim. The name is an abbreviation of their own word Ahahavapupaya meaning "blue water people". They are also called Havasu, Supai and Coconino. The population is about 208. Leaflet 33.

8. HOPI (Hóe-pee). A Pueblo tribe of Shoshonean stock living in 11 towns in north central Arizona. The name is an abbreviation of Hopitu, meaning "peaceful ones". Moqui or Moki, a Navaho nickname, was formerly used as a name for the Hopi. The population is about 3250. Leaflets 13, 17, 18, 43-44, 45-46 and 47.

9. JEMEZ (Háy-mess). A tribe of the Jemez branch of the Tanoan stock living in a pueblo of the same name in northern New Mexico. The name is probably a Spanish corruption of Hemis, the native word for "Jemez people". The native name is Tuwa, Tukwa or Tuyó, meaning "at, or to, the pueblo". The population is about 650. Leaflets 45-46 and 53-54.

10. JICARILLA (Hee-ka-rée-yah). Spanish for "little basket". See "Apache" for the native name. A band of Apache which has long lived in northern New Mexico and adjoining regions. At present they live on a reservation in north central New Mexico. The population is about 714. Leaflet 16.

11. KERES or QUERES (Kay-res). A tribe of Pueblo Indians constituting the Keresan stock. It occupies 14 pueblos or villages—including the colonies belonging to Laguna and Santa Ana—in north central New Mexico. The total population of the tribe is about 5800. Leaflets, 4, 6, 8, 9, 11, 14, 30, 43-44, 45-46.

12. LIPAN (Lee-pan). A corruption of Ipa-n'de, a personal name, Ipa, plus n'de, meaning "people". The native name is Naizhan, meaning "ours, or our kind". An Apache group formerly ranging in southeastern New Mexico and adjoining portions of Mexico and Texas. Only a few dozen survive on the Mescalero reservation. Leaflet 16.

13. MARICOPA (Ma-ree-ko-pah). A name of unknown origin and meaning for a tribe of Yuman stock calling themselves Pipai or Pipas, meaning 'men'. This tribe has lived for a long time with the Pima on the Gila River reservation in south central Arizona. The population is about 500.

14. MESCALERO (Mes-ka-laír-o). Spanish for "mescal people". The native name is apparently Sejen-ne. A group of Apache, once living in east central New Mexico and west Texas. They now live on a reservation in south central New Mexico. The population is about 450. Leaflets 16 and 9.

15. MOHAVE (Mo-há-ve). A corruption of hamakhava, of unknown meaning. A tribe of Yuman stock which have lived since their discovery along the Colorado river near Needles, California, Parker, Arizona, and on the Colorado River Reservation. The present population is about 800.

16. MOHAVE-APACHE. See Yavapai.

17. MOQUI or MOKI. See Hopi.

18. NAVAHO (Nah-vah-ho). Probably from the Tewa word Navahu, meaning "great planted fields". This was the name of a ruined pueblo near which the early Spaniards found people whom they called Apaches de Navajo, the forerunners of the modern Navaho. A tribe of Athabaskan stock now living on a very large reservation in northeastern Arizona and northwestern New Mexico. The population is about 45,000. The tribe is the largest in the United States and has increased very rapidly in size without marriage with whites. The percentage of full bloods is very high.

19. PAIUTE, PIUTE or PAHUTE (Pie-ute or Pah-ute). Suggested but very uncertain interpretations are "true Ute" for the first two and "water Ute" for the third. This name has been applied to Shoshonean tribes in many parts of the west. In the southwest the name is applied to Shoshonean bands living in southern Utah and Nevada and northwestern Arizona. Exact population figures cannot be found, but it is indicated that there are at least 500 Paiutes in the area.

20. PAPAGO (Pa-pa-go). A corruption of papavi-o-otam, meaning "bean people". A tribe of Piman stock once living in south central Arizona and northern Mexico. Today the American branch lives on four reservations in south central Arizona and numbers about 6300. Late figures for the Mexican branch are not available, but in 1900 there seem to have been about 100 in that country. Leaflet 9.

21. PIMA (Pee-mah). A corruption of pi-match, 'I don't know' in Piman. The native name is akimult awawtam, 'river people'. A tribe of Piman stock once dwelling in the Gila and Santa Cruz valleys in southern Arizona,

but now restricted to the Gila River and Salt River reservations near Phoenix, Arizona. The population of the American branch is about 5200. Census figures for the Nevome or Mexican Pima are not available. Leaflets 5 and 9.

22. QUAHATIKA (Kwa-há-ti-ka). A corruption of Kwohatk, the native name, of unknown meaning. A small tribe of Piman stock, closely allied with the Pima and today living on part of the Pima reservation. No information is available as to their numbers.

23. TEWA (Táy-wa). An abbreviation of Tewatowa. Tewa may possibly have once meant "home" or "pueblo" and towa means "people". A tribe of Pueblo Indians constituting one branch of the Tanoan stock. The tribe occupies six pueblos in northern New Mexico and one, Hano, located among the Hopi in north central Arizona. The total population is about 1500. Leaflets referred to under "Keres".

24. TIWA or TIGUA (Tée-wa). A name of unknown meaning applied to a branch of the Tanoan stock living in four pueblos in northern and central New Mexico. The population is about 2125. Leaflets referred to under "Keres".

25. WALAPAI or HUALAPAI (Wáh-lah-pie). A corruption of Hawalyapaya, "pine tree people". A tribe of the Yuman stock living south of the great bend of the Colorado River in northwestern Arizona. Few of the tribe live on the Truxton canyon reservation set aside for them. The tribe is closely related to the Havasupai, their neighbors on the east. The population is about 450.

26. YAVAPAI (Yá-va-pie). A corruption of Yevepaya, of which the meaning is not given. Reference 3 states that "sun people" is the significance and reference 7 that "sulky people" is the name for the southeastern branch. A tribe of Yuman stock once ranging over west central Arizona and now residing on the Fort McDowell reservation. Owing to their having been called Yuma-Apache and Mohave-Apache records about them have become much mixed, so that population figures are vague. The best available sets them at about 200. There are three main subdivisions of the tribe, northeastern, western and southeastern, called respectively Yavape, Tolkepaya and Kewevkopaya. The syllables 'pa' and 'pe' mean 'person'.

27. YUMA (Yóu-ma). This word seems to be a corruption of the Pima "i-um" the name given by them to the Yuma. The people call themselves Kwitchiana, of unknown meaning. A tribe of Yuman stock which has lived for a very long period in the neighborhood of Yuma, Arizona, on a reservation on the west or California bank just north of the Mexican line. The present population is about 850.

28. YUMA-APACHE. See Yavapai.

29. ZUÑI (Zóon-ye). Derived from the Keresan or Tewa word Sunyi, of unknown meaning. The native name is Ashiwi, "the flesh". A Pueblo tribe constituting the Zuñian stock and occupying one main town, Zuñi, and four colonies, all about 40 miles south of Gallup, New Mexico. The population is about 2100.

Compiled from the following sources by F. H. Douglas:

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OFFICE OF INDIAN AFFAIRS

2. Annual report of the Commissioner for 1937.

BUREAU OF ETHNOLOGY, WASHINGTON

3. Handbook of American Indians. Bulletin 30. 1907-1910.

4. Handbook of the Indians of California—Kroeber. Bulletin 78. 1925.

JOURNAL OF AMERICAN FOLK-LORE

5. A Yuma account of origins—J. P. Harrington. Vol. 21, p. 324. 1908.

UNIVERSITY OF CALIFORNIA, BERKELEY

6. Ethnography of the Yuma Indians—Förde. Publications in American Archeology and Ethnology. Vol. 28, no. 4. 1931.

7. The southeastern Yavapai—Gifford. As above, Vol. 29, no. 3. 1932.

8. The Cocopa—Gifford. As above, Vol. 31, no. 5. 1933.

9. Northeastern and Western Yavapai—Gifford. As above, Vol. 34, no. 4. 1936.

AMERICAN ANTHROPOLOGIST

10. Southern Paiute Bands—Kelly. Vol. 36, no. 4. 1934.

11. The Social Divisions . . . of the Western Apache—Goodwin. Vol. 37, no. 1. 1935.

UNIVERSITY OF CHICAGO

12. Yuman Tribes of the Gila River—Spier. 1933.

AMERICAN MUSEUM OF NATURAL HISTORY, NEW YORK.

13. Havasupai Ethnography—Spier. Anthropological Papers. Vol. 29, pt. 3. 1928.

For additional reading lists, see the leaflets referred to in the text.

DENVER ART MUSEUM

1300 LOGAN STREET, DENVER, COLORADO

NORMAN FEDER

Curator



COLORS IN INDIAN ARTS; THEIR SOURCES AND USES



LEAFLET 56

MARCH, 1933

1. INTRODUCTORY. This leaflet attempts to clear up certain apparently widespread ideas about the colors in Indian handicraft. Children in the grades which are studying Indians seem to feel that the "root, bark, nut" formula covers all the colors which they see in Indian work of every kind. To correct this the principal kinds of colors are given and their distribution outlined in the following sections.

VARIETIES OF COLORS

2. NATURAL COLORS. Many naturally colored materials are used by the Indian without treatment. The list includes stones, bark, colored leaves, stems and roots of plants, wood, undyed wools and other textile fabrics, seeds and unpainted clays in pottery.

3. VEGETABLE DYES occur in bewildering variety, though many of them have gone out of use. See Leaflets 63 and 71.

4. MINERAL DYES AND PAINTS. Naturally colored earths and rocks of many shades are ground to powder and mixed for paints. As dyes they are less common.

5. ANILINE DYES. The first aniline dye, mauveine, was invented in England in 1856. In the next 12 years only 8 more shades were found, though these were made in sufficient quantity to warrant an American tariff in 1864. By 1870 dyes of this kind had spread through the more civilized portions of Europe and America, and 5 to 10 years later had become known almost everywhere. Materials colored with aniline dyes and packages of dyes seem to have come to the Indians in the seventies.

6. METHODS OF USING ANILINE. Objects to be dyed were boiled with powdered dye or with dyed cloth of the desired color. The latter method was extremely common.

7. DYED CLOTH, colored either with anilines or their predecessors, provided much of the color in Indian costumes and manufactures. Except in the Southwest the "blanket" Indian of the books was wrapped in such cloth. It is a common trimming on many kinds of objects. In the Southwest it was raveled and woven into blankets by the Navaho. The best of this raveled material was English baize, called bayeta in Spanish.

BASKETRY

8. ALEUT or ATTU. The colored patterns are made with thread or bits of raveled cloth obtained from the whites.

9. NORTHWEST COAST. Before anilines came in, the Tlinkit used the following colors: black, sulphur-spring mud, hemlock bark and iron scrapings in salt water; 2 shades of purple, huckleberries; red, alder bark and wood, sea-urchin juice, nettle and hemlock bark; yellow, the lichen *Evernia vulpina* or wolf moss; greenish-blue, hemlock bark with oxide of copper. Straw color is undyed grass, and blackish purple is either maiden-hair fern or *Equisetum pulegioides*. The brown background is spruce root, undyed.

Haida basketry other than hats shows black, mud dyed stripes. The hats have painted designs. Before modern commercial paints came in they used the following colors: black, charcoal, lignite coal and charred fungus; red, ochre and cinnabar; white and brown, ochres. Vegetable juices are mentioned.

10. SOUTHWESTERN BRITISH COLUMBIA. The Salish coiled and imbricated basketry from this area shows a background of undyed brown cedar root. The colors commonly used follow: white or straw color, reed, and rye-grass; red, cherry bark or grass dyed with alder; black, grass or bark dyed with mud, charcoal, tea, balsam bark or dogwood bark.

11. COLUMBIA RIVER BASIN. Most of basketry from this area is trimmed in one way or another with the smooth, shiny, white or light yellow squaw grass, *Xerophyllum*. Before aniline dyes came in colors were few and of the same types as those listed in the section above. An additional yellow came from the Oregon grape. Two varieties of brightly colored work are made today. On Cape Flattery the Makah and nearby tribes make little white baskets with brightly colored boats, animals, etc., in aniline colors. In the west of the area the Nez Percé and their neighbors make flat wallets with highly colored geometrical patterns. Today many of these colored figures are made with threads and yarns dyed by the whites.

12. CALIFORNIA. In the northern part of the state red, black and white basketry is found. The red is fern root dyed with alder, the black is maiden-hair fern and the white is squaw grass. Through the central part of the state red and black are the colors used. In the northern part of this section the red is commonly redbud bark and the black fern root, or any of several materials dyed by soaking in mud. The light backgrounds are undyed. In the southern part of the middle section and the southeastern part of the state the red is usually tree yucca root and the black the skin of the seed pod of the devil's claw or martynia. The light backgrounds, as above, are natural color. In the southwestern part of the state the predominant basketry is the Mission type. The characteristic mottled

brown is the natural color of the *Juncus* rush leaf. Black dye is made from elderberry, seablight, or blackberry juice, and yellow from leather root, parosela and *Dalea Emoryi*.

13. SOUTHWEST. On Pima, old Papago, western Apache, Chemehuevi, and Havasupai basketry black from the martynia or devil's claw seed pod is the only color. Mescalero Apache work shows various shades of yellow, green and brown, all from various parts of the yucca plant. Modern Papago colors are also from the yucca. Jicarilla Apache basketry has bright aniline colors. In the Navaho and Piute "wedding" baskets the black is a mixture of coal, sumac leaves and rosin, and the brown a concoction of mountain mahogany and juniper roots with alder bark.

Hopi basketry, the most varied and brilliant in color of all, used to have rather limited native colors, went aniline very violently and now has turned to native colors again, more numerous and bright than those used earlier. The full list is too long for inclusion here. Many kinds of plants and minerals produce the great range of shades seen today. See leaflet 17 for a full list.

14. SOUTHEAST. This quarter of the country was the home of split cane and oak basketry colored with various combinations of red, black and yellow or tan, the latter being the natural color of the cane. The black was made from black walnut root and the red from puccoon root, *Sanguinaria Canadensis*.

15. NORTHEAST. The wood splint basketry of the north central area and of the east is generally uncolored. When colors were used they were native vegetable dyes, later superseded by anilines.

BEADWORK

16. BEADS MADE BY WHITES. The small "seed" beads used in Indian beadwork are and always have been made in Europe. Except for one isolated case, the Hidatsa, Mandan and Arikara of North Dakota, the Indians never made colored glass or china beads.

17. WAMPUM. The purple color of eastern wampum is natural in the shells from which the beads are made.

18. TURQUOISE. The green and blue shades seen in beads of this material from the Southwest are natural.

19. SHELL. Most shell beads are white. In addition to the purple of wampum there are reds and oranges seen in Southwestern work. These colors are natural.

20. CORAL. This material is all imported for trade with the Indians. The color is natural.

21. SEEDS of various natural colors are used as beads.

22. PAINTING of carved wood, such as Pueblo kachina dolls and ceremonial altars, and Northwest totem poles, boxes and other objects was formerly done with colored earths. Today commercial paints are used. Colored earths were also used for the Plains skin paintings. Masks were once similarly treated, but today commercial paints have largely supplanted them. Tribes of a conservative nature probably still cling pretty closely to the old paints, especially for use on ceremonial objects.

23. CHARACTER OF PAINTS. Earths and rock colored with iron or copper compounds supplied most of the colors. Iron tinged the earth red, brown, yellow, orange and intermediate shades. Copper produced the blues and greens. Black came from iron and magnesium. Kaolin produced white. The range of earth colors is practically unlimited. The common medium with which these ground up earths are mixed is grease or fat, though water or saliva are probably equally used.

24. WATER COLORS AND MURALS. The pictures of these types which the Indian artists are making today are all executed with commercial water color and oil paints.

25. QUILLWORK. Before commercial beads were imported the tribes which lived in the northern section of the country, the western mountains and on the great plains used colored porcupine quills for decoration. The dyes were of vegetable origin. The art of quillwork has largely disappeared and with it has gone the knowledge of the dyes, so that only a few sources can be given. Red; root of *Galium tinctorum*, buffalo berry, squaw current, dock root, tamarack bark, spruce cones, sumac berries, bloodroot and hemlock bark; black, alder bark, wild grapes, hickory and walnuts, and butternut bark; yellow, wolf or fox moss, wild sunflower, cone flower, black willow roots, sumac roots; purple, blueberries; blue, larkspur.

All tribes did not use all of these dyes. Space does not permit arranging them geographically. Aniline colors have long been used.

26. POTTERY paints of the yellow-red series and white are colored clays and earths ground in water. Black is made from the sediment obtained by boiling the bee-plant, from iron or magnesium, or from combinations of the vegetable and mineral. Shiny black is caused by bringing sooty smoke in contact with red hot pottery. The natural colors of the

unpainted clays are seen in some types. In very recent years some pottery has been painted with commercial colors after firing.

WEAVING

27. NAVAHO. Before the appearance of aniline dyes in the late seventies the native colors were few. Red-brown was made from a mixture of alder and mountain mahogany bark mixed, and from red or yellow ochre. Yellow came from rabbit weed flowers, yellow ochre or canaigue root, *Rumex hymenosepalum*. Blue was made with indigo and possibly a blue clay. Green was made with combinations of the blue and yellow dyes, and black from a mixture of sumac, yellow ochre and pinyon gum. Grey, dark brown and white are natural wool colors. The brilliant red, if not aniline, is cochineal, introduced by the whites, as was indigo. In recent years there has been a revival of vegetable colors, mostly in soft pastel shades. This style of dye is in the experimental stage, all sorts of vegetable materials being tried out. No exact data can be given.

28. HOPI AND PUEBLO. Beyond the statement that the Pueblo weavers had vegetable dyes which produced yellows, orange, browns, umbers, greens and black no information can be given. These people also had the natural colored wools and cotton, indigo and cochineal and aniline dyes. The wool embroidery on cotton ceremonial garments is all aniline colored, unless the piece is known to be over 50 years old.

29. SALISH. The dog hair and mountain goat wool blankets of the Vancouver Island region show native colors in several shades, but no data can be given as to the sources of these dyes.

30. CHILKAT. The mountain goat wool blankets of the Northwest coast, commonly called Chilkat, have three colors, black from hemlock bark, yellow from the lichen wolf-moss or *Evernia vulpina*, and green from copper oxide. Aniline dyes appeared about 1892, but did not last long. Though perhaps today they have come back into use.

31. GREAT LAKES AND CENTRAL AREA. The flat woven wool bags and reed mats made by many tribes in this region were formerly dyed with native vegetable colors. But these have long been replaced with commercial dyes.

32. SAND PAINTING. The name of this art gives the clue to the materials used. With two exceptions the materials are ground up earths and rocks. The Apache used powdered leaves for green and the southern California tribes use colored seeds. For details see Leaflet 43-44.

Compiled from the following sources by F. H. Douglas:

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1. Aboriginal American Basketry—Mason. Annual Report 1902.

BUREAU OF AMERICAN ETHNOLOGY, WASHINGTON

2. Handbook of American Indians. Bulletin 30.
3. Coiled basketry in British Columbia—Haeberlin et al. 41st Annual Report 1928.
4. Uses of plants by Indians of the Missouri River region—Gilmore. 33rd Annual Report 1919.
5. Uses of plants by the Chippewa Indians—Densmore. 44th Annual Report 1928.

MUSEUM OF THE AMERICAN INDIAN, NEW YORK

6. Material Culture of the Menomini—Skinner. Indian Notes and Monographs 20. 1921.
7. The Technique of Porcupine-quill Decoration among the North American Indians—Orchard. Contributions vol. 4, no. 1. 1916.
8. Beads and Beadwork of the American Indians—Orchard. Contributions vol. 11. 1929.
9. A Rare Salish Blanket—Heye and Orchard. Leaflet 5. 1926.

MILWAUKEE PUBLIC MUSEUM

10. Decorative Art and Basketry of the Cherokee—Speck. Bulletin vol. 2, art. 2. 1920.

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11. Technique of the major Hopi crafts—Colton. Museum Notes vol. 3, no. 12. 1931.

SOUTHWEST MUSEUM, LOS ANGELES

12. Conversations and communications from Charles Amsden.

AMERICAN MUSEUM OF NATURAL HISTORY, NEW YORK

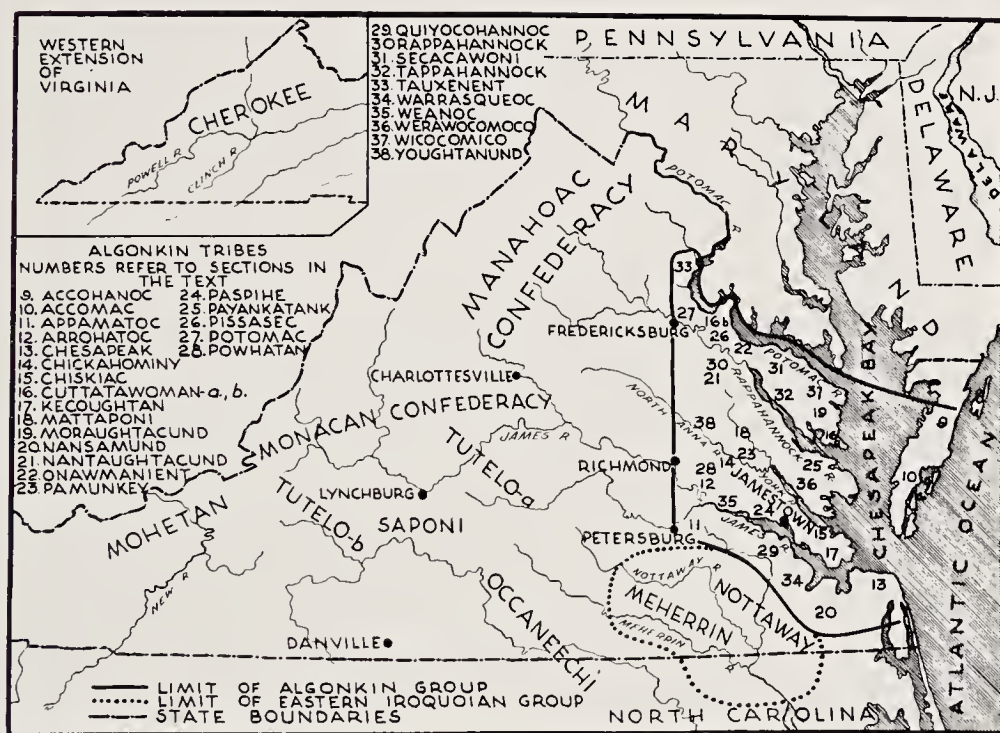
13. The Chilkat Blanket—Emmons. Memoirs vol. 3, pt. 4. 1907.

LABORATORY OF ANTHROPOLOGY, SANTE FE.

14. Conversations and communications from various members of the staff.

1300 LOGAN STREET, DENVER, COLORADO

RICHARD G. CONN, CURATOR



Names, Locations and Population



3rd Printing, June 1957

1. LINGUISTIC STOCKS. In the 17th century the area now included in the state of Virginia was inhabited by tribes belonging to 3 linguistic stocks, Algonkin, Siouan and Iroquoian.

2. POPULATION figures for the state are very largely guesswork. The early colonists counted the fighting men only and not the whole population. For the tribes which were far inland there are only estimates. The population of the eastern and central parts of the area seems to have been about 15,000. The mountainous areas to the west were held by the Cherokee to the south and by various wandering tribes in the north and central parts of this section. The number of these people is not known and seems to have fluctuated considerably. Probably a few thousand could be safely added to the figure given above.

3. HISTORY. The tribal locations and populations listed in this leaflet are those of the early 17th century. The arrival of the Jamestown colonists and the rise of the Iroquois confederacy began a series of wars, shiftings of peoples and reductions of populations which radically changed matters long before the end of the century.

4. TRIBE. This word is loosely used as a convenient title for the many little groups of Indians living in Virginia. The question of whether a group was really an independent tribe or merely a collection of people gathered about a village in the territory of a larger tribe is a difficult one to answer from the available information.

5. SURVIVING POPULATION. About 2000 mixed bloods still live in the state. These groups are mentioned in sections 9, 10, 14, 18, 20, 23, 27, 30, 36, and 37.

ALGONKIN TRIBES

6. LOCATION. These tribes held the coast line and the south bank of the Potomac river from just west of Washington down almost to the southern boundary of the state. Their territory extended inland as far as a line running from Washington south through Fredericksburg and Richmond to Petersburg, where it turned east to the sea. This is the "fall line" where a geologic fault causes waterfalls and cascades in the rivers crossing it. The tribes also held the narrow southern portion of the peninsula which forms the eastern shore of Chesapeake Bay.

7. POPULATION. In the Algonkin section the population figures are for 1607.

8. POWHATAN CONFEDERACY. All the tribes in the Algonkin group were to some extent members of the confederacy organized and ruled by the Chief Powhatan. (See section 28).

9. ACCOHANOC. Accomac and Northampton counties, about the northern half of the eastern peninsula. Population 150. A few mixed bloods live near Drummond town.

10. ACCOMAC. The principal village was near the present Cheriton on Cherrystone Inlet in Northampton county. Population about 300. A few survivors live near Fishers Inlet.

11. APPAMATOC. This tribe centered about the site of the present Bermuda Hundred, in Prince George county southeast of Richmond. Population about 200.

12. ARROHATOC. The principal village was 12 miles below Richmond on the James river in Henrico county. Population about 100.

13. CHESAPEAK. A tribe on the Linnhaven river in Princess Anne county, southeast of Norfolk. The tribe had vanished by 1669. Population 350.

14. CHICKAHOMINY. One of the leading tribes of Colonial times, numbering about 900. The home of the tribe has always been on both sides of the Chickahominy river in New Kent and Charles City counties. About 400 mixed bloods survive, centering about Samaria, Windsor Shades and Boulevard.

15. CHISKIAC. A tribe which lived in York county along the south side of York river. Population, 200.

16. CUTTAWOMAN. There were two tribes of this name. One, 16a, numbering about 120, lived in Lancaster county on the Rappahannock river at the mouth of the Corotoman river. The other, 16b, with about 80 members, lived in King George county on the Rappahannock about Lamb creek.

17. KECOUGHTAN. A tribe at the mouth of the James river in Elizabeth City county. Population 75.

18. MATTAPONI. (Accent on final i, pronounced eye). A small tribe, perhaps a branch of the Pamunkey, who lived in colonial times on the Pamunkey and Mattapony rivers. Today about 150 mixed bloods live in two settlements on the Mattapony river in King William county. The two villages are Indian Town and Adamstown. The latter group

are called Adamstown Indians and may be a surviving vestage of the Nantaughtacund Indians of colonial times.

19. MORAUGHTACUND. This tribe lived along the north bank of the Rappahannock river in Lancaster and Richmond counties. Their center was at the mouth of the Moratico river. Population 300.

20. NANSAMUND. An important tribe in colonial times. Population about 750. Their territory lay along the south side of the lower James river in Nansemond and Norfolk counties. The main town was at Chuckatuck, in the former county. About 200 mixed bloods survive today around Bowers Hill in Norfolk county.

21. NANTAUGHTACUND. This tribe lived in Essex and Caroline counties south of the Rappahannock river. Population about 750.

22. ONAWMANIENT. A tribe which lived about Nominy Bay on the south bank of the Potomac river in Westmoreland county. Population 400.

23. PAMUNKEY. The largest of the Algonkin tribes in colonial times. The population was about 1000. They lived in the country about the junction of the Pamunkey and Mattaponi rivers in King William county, with the principal town where West Point now stands. About 150 mixed bloods live today on a reservation near Lester Manor, about 20 miles east of Richmond. About as many more are scattered through the region.

24. PASPIHE or PASPAHEGH. This tribe was the one in closest contact with the Jamestown settlers. Their lands lay in Charles City county between the James and Chickahominy rivers. Population 200.

25. PAYANKATANK. This tribe lived on the Piankatank river in Middlesex county. Population 200.

26. PISSASEC. A tribe of Westmoreland county, on the north bank of the Rappahannock river in the neighborhood of the present Leedstown. No population figures are available.

27. POTOMAC or PATAWOMEKE. An important tribe centering about a town of the same name in Stafford county on a peninsula formed by the Potomac river. Population about 800. Today perhaps 150 mixed bloods live in the neighborhood, about 8 miles north of Fredericksburg. It is not certain that this group is a remnant of the old tribe, though it bears the same name.

28. POWHATAN. This name, so celebrated in the early history of Virginia, was first applied to the town of a small tribe, numbering about 150, which was located near the falls of the James river near the present Richmond. The chief of the tribe when discovered was Wahunsonacock. This man came to be called Powhatan because of his place of residence, and as such is known today. The name is also applied to the confederacy of all these little tribes which the chief built up by conquest and inheritance.

29. QUIYOCOZHANOC. A tribe which lived about Upper Chipok creek in Surry county. Population 125.

30. RAPPAHANNOCK. A tribe of about 400 members who lived along the south shore of the Rappahannock river in Richmond county. Today perhaps 500 mixed bloods live in the neighborhood. In this group are included the descendants of the Nantaughtacund and perhaps other tribes of the region.

31. SECACAWONI. A tribe which lived along the Coan river, a tributary of the Potomac from the south, in Northumberland county. Population about 120.

32. TAPPAHANNOCK. Probably a variation of Rappahannock and applied to the members of that group which lived on the north side of the Rappahannock river in Richmond county and nearby. At this late date confusion of names is inevitable and exact accuracy impossible.

33. TAUXENENT. A tribe which held the territory in Fairfax county along the south shore of the Potomac river in the neighborhood of the present Mount Vernon. Population 150.

34. WARRASQUEOC. A tribe, the numbers of which are unknown, which formerly lived in Isle of Wight county at the mouth of Warrasqueoc creek on the south bank of the James river.

35. WEANOC. This tribe lived in Charles City county on the north bank of the James river. Population about 500.

36. WERAWOCOMOCO. A tribe of 200 persons who lived in Gloucester county on the north bank of the York river nearly opposite the mouth of Queen creek. Perhaps 100 mixed bloods still live in the region.

37. WICOCOMICO or WICOMOCO. This tribe lived on the south side of the Potomac river at its mouth in Northumberland county. Population about 500. Several hundred mixed bloods are said still to live in the region.

38. YOUGHTANUND. A tribe of about 250 members which lived on the Pamunkey river in Hanover county.

IROQUOIAN TRIBES

39. CHEROKEE. The narrow westward extension of Virginia, on the west side of the Blue Ridge mountains, was in the hands of the Cherokee.

40. MEHERRIN. A tribe which formerly lived along the river of the same name in southeastern Virginia and northeastern North Carolina. They seem to have numbered about

700 in 1600. Later, remnants of the Conestoga, or Susquehanna, from upper Maryland settled among them.

41. NOTTAWAY or MANGOAC. A tribe of considerable size which lived along the river of the same name in southeastern Virginia. The population in 1600 was about 1500. The tribe was closely allied with the Meherrin. A few survived as late as 1825.

SIUAN TRIBES

42. MANAHOAC. The name of a group of tribes occupying northern Virginia from the fall line of the rivers to the mountains, and from the Potomac south to the North Anna river, a bit north of Charlottesville. The population was perhaps 1500 in 1600. Of the tribes the names of 8 are known, as follows: Hassinunga, Manahoac, Ontponea, Shackaconia, Stegarakes, Tanxnitania, Tegninateo, and Whonkenti.

43. MONACAN. A tribe and a confederacy which held the upper valley of the James river and its tributaries from the falls of the James west to the Blue Ridge. Five names connected with this group are given but from available information it is hard to tell whether the names should be applied to towns or tribes. Locations also differ in the various sources. The following names are given. Massinac was apparently about 25 miles west of Richmond on the south bank of the James in Powhatan county. Mowemcho or Mohemencho, also called Monacan Town, was 12 to 15 miles west of Richmond on the south bank of the James in Chesterfield county. This was the center of the Monacan tribe. Monahassano is a form of the word Yesang, the native name of the Tutelo (see below). According to one source the tribe lived in Bedford and Buckingham counties, while another places the center in Nelson county. Monasiccapano also is placed in two areas, one being near Charlottesville in Albemarle county and the other just east in Louisa and Fluvanna counties. Rasawek, called by all the chief town of the confederacy, was at the fork of the James and Rivanna rivers in Fluvanna county. The population in 1600 of the confederacy is estimated at 1200.

It is possible that the tribes named in this and the following sections may have been one people, to whom several names were given at different periods.

44. MOHETAN. This tribe, of unknown size, lived on the upper waters of the New River in the western mountains.

45. OCCANEECHI. Until their discovery in 1670 this tribe of about 1200 people lived on an island in the Roanoke river near the present Clarksville, in Mecklenburg county.

46. SAPONI. This name, applied rather confusingly to a number of groups, here refers to a tribe which until sometime after 1670 centered about a village on Otter creek, a tributary of the upper Roanoke from the north, southwest of Lynchburg in Campbell county. The rest of the 17th century the tribe spent near the Occaneechi (see above). Population figures are not available but perhaps 1200 is near the figure for the early 17th century.

47. TUTELO. This name, applied here to a single tribe, was one form of the Iroquois name for the southern Siuan tribes. The single tribe known by the name called themselves Yesang. This is the tribe called Monahassano by the Jamestown colonists. For the debatable location of their center see section 43. The tribe spent the last years of the 17th century with the Saponi and Occaneechi. Their numbers can only be guessed to have been towards a thousand. Under the name Tuteli the tribe survives today in the persons of about 100 mixed bloods living with the Iroquois in Ontario, Canada.

Compiled from the following sources by F. H. Douglas:

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The Algonkin groups, 17th century and modern, 1, 3, 4, 5, 6, 8; the Siuan groups, 2, 3, 9; the Iroquoian groups 3; maps, 2, 4, 8.

Thanks are due to Dr. F. G. Speck of the University of Pennsylvania for his assistance on this leaflet.

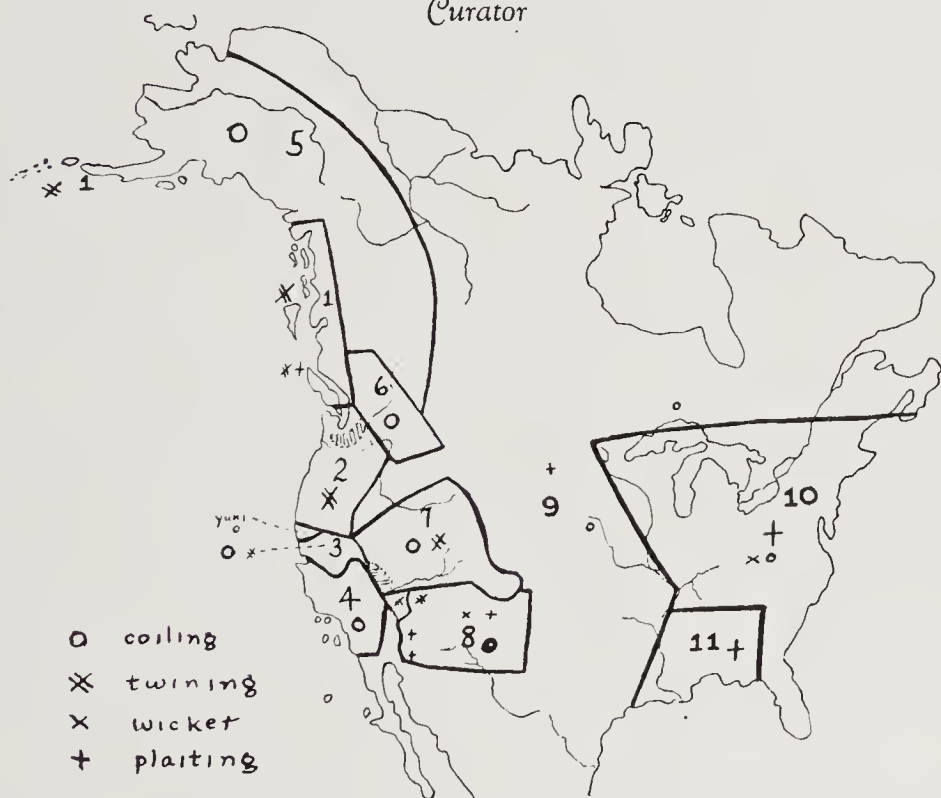
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Basketry areas of North America. The peoples of area 2, indicated by vertical shading, also now make imbricated coiled ware such as is found in area 6. The people of area 7 indicated by horizontal shading, make coiled ware which might be classed with area 3.

Courtesy of Gene Weltfish and the American Anthropologist

INDIAN BASKETRY

Varieties and Distribution



LEAFLET 58

MAY, 1933

1. BASKETS are the objects made, without the aid of even crude machinery, by intertwining or weaving together long slender sections of vegetable material. Mats differ from baskets in that they are flat and not shaped into vessels. Cloth differs from basketry by being made of spun or twisted fibres on some sort of a mechanical device.

2. TECHNIC. Like cloth, basketry is made up of two elements: warp, which is the foundation; and weft or woof, which is the filler connecting the warps. These two elements are combined in four fundamental ways: coiling has a continuous horizontal warp moving upward in spirals which are wrapped and sewed to each other by the weft; twining has vertical warps with horizontal wefts twisted around them; wicker work has warps which are enclosed by wefts passed alternately above and below them without twisting; plaiting or checker work has a warp and a weft which are indistinguishable, being of the same size and shape and equally active. All of these basic technics have many variations. See references 1 and 2.

3. DECORATION is applied in six ways: false embroidery, by which a third element is wrapped around the weft elements on the outside of the basket; imbrication, by which a third element is folded back and forth over the stitching element of coiled basketry, overlapping like shingles; wrapped twining, by which one flexible weft is wrapped around the crossing of the warp and the second weft, which is stiff; overlay twining, by which a third element is laid against one weft and is twisted with it, showing both inside and out or outside alone according to the manner of twisting; having the color of the weft differ for background and for pattern; painting.

4. VARIETIES OF BASKETRY. The purpose of this leaflet is to indicate the distribution of basketry in America north of Mexico, and to give some idea about the appearance and technics of the various kinds. Space will permit the mention of the more important kinds only.

Geography is taken as the basis of the classification, the country being divided into 11 areas. It must be understood that the boundaries of these areas are not absolute, as the areas often shade gradually into each other. There are also many exceptions to the general statements made in the leaflet.

5. AREA 1—Northwest Coast. In the northernmost part of this area the Aleut make very finely twined cylindrical baskets and flat wallets. The background is straw colored and the decorations are made of colored thread. This is the most delicate basketry in America. In the central part the Tlinkit and Haida make fine twined cylindrical baskets and conical hats of spruce root. The background is brown and the many colored geometrical decorations are applied by false embroidery. The hats have painted designs. In the south the Tsimshian, Kwakiutl, Nootka and Bella Coola make plaited baskets of brown cedar bark.

6. AREA 2—Oregon, Washington and Northern California. In this area twining predominates. In the northwest the Makah make small round and rectangular baskets, often with lids, in wrapped twining. The background is light, with small brightly colored designs, often naturalistic. In the northeast flat flexible wallets are made, decorated in color by wrapped twining or false embroidery. The designs are geometric. The Nez Percé are the best known makers. In the center, flexible, cylindrical baskets prevail. They are usually light in color with geometric designs in a few dark colors. Skokomish, Clallam and Quinault are the best known. A group, of which the Klickitat is the best known tribe, make coiled baskets with imbricated decoration. The color is light or dark on brown, or dark on light. Large zigzags are the most common pattern. To the southwest are the Hupa, Karok, and Yurok of California, makers of excellent twined work

with overlay decoration. Brimless caps with red or black geometric designs on light are their most famous product. Less fancy work has a ground of brown conifer root with light designs. The designs in this section are on the outside. In the southeastern corner are the Pit River tribes, and also the Northern Wintun and Northern Maidu. Their twined work has an allover light overlay with black geometric designs which show both outside and in. In southern Oregon the Klamath and Modoc make very flexible twined baskets of brown tule rush.

7. AREA 3—Central California. Coiling on a 3 rod warp is the rule in this area, though the Pomo, probably the best and most versatile of all basket makers, do much work in twining. Pomo coiling is usually light, with black or red geometric designs. Long shallow oval shapes are characteristic of this tribe. Another specialty is the coiled basketry trimmed with brightly colored feathers. The twined work is light brown with red, black and light designs, often in narrow bands. Maidu coiling is light with red designs, very often bold combinations of triangles. Miwok coiling is light with black and sometimes red geometric designs. Just over the border in Nevada are the Washo, makers of delicate light baskets with fine black designs. The rare Yuki baskets are red on light.

8. AREA 4—Southern California. Coiling on a grass bundle warp is found throughout this area. In the north are the Yokuts, who make the baskets commonly called Tulare. The "bottleneck" is the best known product of these people. It has a broad body with nearly flat shoulders pinching in on a small neck. Feathers or red wool tufts are usually set around the top of the body. The background is brown with horizontal bands of red and black geometric or conventionalized life form designs. Diagonal designs are also used. Rather similar are the baskets of the Kern River, Panamint and Mono, south and east of the Yokuts. Space does not permit an attempt to give the points of difference between these closely related types. In the southwest corner are the various groups of "Mission" Indians, makers of a basketry which can be distinguished by its mottled brown surface decked with black designs.

9. AREA 5—Central Alaska and Inner British Columbia. In this immense area live a few simple tribes who make rather crude coiled basketry. Besides the Athabascan tribes of the interior, coiled work is made by the coastal Eskimo.

10. AREA 6—Southern British Columbia. Coiled basketry decorated by imbrication is the type in this area. The Chilcotin, Shuswap, Lillooet, Fraser and Thompson Indians are the makers, each with their own tribal peculiarities. Large square or oblong shapes are the rule. The sides often curve down from a large mouth to a small base. Quite large hampers with lids are made. The baskets are brown of varying shades bearing simple geometric red, black or light designs.

11. AREA 7—Great Basin or Interior Plateau. In this area crude coiled work is made by the Paviotso, Paiute, Bannock, Shoshone and Ute. It is usually light in color, poorly made and with little if any decoration. In the south of the area some of the Paiute groups make, or have made, very fine coiled basketry, usually light with simple dark designs. Diagonal twined work is also made in this area. Some of it is of fairly high quality.

12. AREA 8—Southwest. Much excellent basketry is made in this section, most of it in various coiled technics. In the northwest are the Chemehuevi, makers of very fine coiled ware on a 3-rod warp. The basketry is light in color with black horizontal design bands. The most characteristic shape is the "bottleneck" with rounded curves instead of the angles of the Yokuts. There are also flat trays. In the west central part are the various bands of the western Apache. All these bands make very good 3-rod coiled work with black designs on a light ground. Bowls are the most common shape, though jars, sometimes of great

size, are often made. The designs are vertical or diagonal. Human and animal figures are common. Twined carrying baskets are made, also pitch covered water bottles. In southern Arizona are the Pima and Papago, makers of black and white basketry with a grass bundle warp. Nearly all baskets are bowls. The decorations are superb organizations of frets and meanders. Coarse basket granaries and lace-coil carrying baskets are made. Near the Grand Canyon are the Havasupai, also makers of 3-rod coiling in black and white. They are fond of flat trays with concentric design bands or vertical patterns. The related and nearby Walapai make coarse twined work.

In north central Arizona are the Hopi, who make 3 kinds of basketry: coiled trays and deep shapes with very heavy grass bundle warps; wicker trays and deep shapes; and plaited work bowls of pale green and yellow yucca. The first two types are very colorful, dyed wefts of many colors being used to make elaborate geometric and naturalistic designs. It is the most highly colored basketry in America. Neighbors of the Hopi are the Navaho and Paiute who both make a type of coiled basket bowl for Navaho ceremonial use, the so-called "wedding basket". This is light brown with red and black designs. The Mescalero Apache live in southern New Mexico. Their coiled basketry is made of different parts of the yucca plant, which give the basket simple pale green and yellowish geometric designs. The coil is very flat and broad. In northern New Mexico are the Jicarilla Apache, also workers in the coiled technic. Their baskets have a very heavy, thick and stiff coil, which, combined with their use of bright aniline dyes, makes their basketry unmistakable. Most of the Pueblo groups make plain plaited or wicker work baskets.

13. AREA 9—Plains. Basketry is nearly non-existent in this large area. The two exceptions are the few small coarsely coiled bowls made for gambling by some tribes, and the plaited carrying baskets of the Mandan, Hidatsa and Arickara.

14. AREA 10—Northeast. Basketry is very limited in the northeastern quarter of the country. The Maine tribes and their Canadian neighbors make plaited and wicker baskets of wood splints, and some sweet grass wickerwork. The New York Iroquois make twined and plaited splint baskets, resembling the laundry basket of the whites. They do some twining of corn husks. The same kinds of work are done by the tribes in the Great Lakes region. Some of them make little coiled sweet grass baskets for souvenirs. In all this area decoration is practically nonexistent. The art is now purely utilitarian.

15. AREA 11—Southeast. Throughout the Gulf region much basketry was made of split cane in various plaited technics. The colors are soft, glossy, red, yellow or orange and black. Such baskets were made by the Choctaw, Cherokee, Chickasaw, Alibamu, Kaosati, Attacapa and Chitimacha and no doubt many other now vanished tribes. The Chitimacha baskets, the best of the type, have quite complicated designs, usually light colored angular elements or flowing curves against a dark background. The designs of the other tribes are much simpler.

Besides the cane basketry these tribes and those of the south Atlantic region make utility baskets of oak splints.

Compiled from the following sources by F. H. Douglas:

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INDIAN CLOTH-MAKING

Looms, Technics, and kinds of Fabrics

LEAFLETS 59 AND 60

OCTOBER, 1933

1. INTRODUCTORY. "Cloth-making" is used in the title of this leaflet because "Textiles" involves basketry and beadwork, and "Weaving" brings in fabrics made of vegetal fibres which are not cloth in our sense of the word. This leaflet attempts to describe the kinds of cloth which Indians have made, or still make, to correct the false notion that all Indians were cloth-makers. Only wool and cotton fabrics are described, cotton being a wool, though of vegetal origin.

2. CLOTH is fabric made by the weaving of spun or twisted wool or cotton fibres with the aid of mechanical devices constructed to simplify the manipulation of the fibres. It differs from basketry because the latter is made without specialized mechanical aids, the basket maker's awl not being so considered because of its many uses in other fields.

Indian cloth is not made in long bolts which can be cut in any desired length. Each blanket, belt or bag is a complete unit when finished.

3. WEAVING MACHINES. Five have been developed by the Indian in America north of Mexico. Arranged in order of complexity they are: one point warp suspension; warp suspension from cords strung between upright stakes; warp suspension from a wooden cross-piece upheld by posts; warp wrapped around a pair of parallel, horizontal round bars set in slots in upright posts and capable of being turned; and the true loom, which has the warp made rigid by being fastened at both ends and manipulated by heddles, slim rods tied to the warp in several ways.

On the first three varieties weaving proceeds downwards on warps fastened at the top only, with but one or two warps manipulated at a time. In the fourth variety the warp is tight, but weaving still proceeds downward one warp at a time. On the true loom, the fifth variety, weaving proceeds upward on warps tied at both ends and worked by heddles, so that a considerable number of warps are enclosed by the weft at once.

4. WARP is the foundation of a fabric. The word is applied to all the cords of this type or to one alone.

5. WEFT OR WOOF is the part of a fabric which encloses the warp, filling in the openings between the warps and fastening them together into a solid fabric.

6. CLOTH-MAKING TECHNIQS. Twining is the process of twisting weft around warp. In single twining one weft is wrapped around each warp or small group of warps, and in double twining two or rarely more wefts are manipulated at once by crossing between warps. If the weft encloses pairs of warps so that one member of the pair is enclosed with one member of the next pair on the succeeding weft layer, the weaving proceeds in a diagonal manner and is called twilling or diagonal twining.

In plaiting or checkerwork warp and weft are indistinguishable as they pass over and under each other. Plaiting can also be made diagonal in the manner described for twining.

These two methods, twining and plaiting, are those generally used on all the weaving appliances but the true loom. They are slow methods, as only one warp or group of warps can be enclosed in the weft at a time. Weaving is much faster on the true loom because the heddles make possible the enclosing of many warps at once. On the other types the warps are single strands, or if in groups are treated as single units. But in the true loom the warp is a continuous cord strung in a series of figure-8 loops, which, when pulled very tight, become pairs of warps crossing in the middle. One member of each pair is behind the other, as seen from directly in front, and not beside it. A heddle is tied to the rear unit of each pair. This heddle is pulled toward the weaver and a weft passed behind the rear units and in front of the forward ones. The heddle is then released and by the action of another heddle, called the shed rod, the front warps are pushed forward and the rear ones to the back. A second weft is put in place, which passes in front of the rear warps and behind those in front. Thus with two motions all the warps are enclosed in the weft.

Weaves in which the warp is entirely invisible are called tapestry weaves and allow the making of elaborate patterns in several colors. Weaves which show warp and weft equally are called basketry or open weaves and allow only very simple patterns, because weft color can be changed at will, while warp color remains constant. For further discussion see section 17, on belt weaving.

7. ONE POINT WARP SUSPENSION. A number of warps are tied together at one end and hung from some solid object. The wefts are then twined around the warps one at a time. Only round bags and narrow bands can be made by this method. The best known products of this process are the sandals, bags and head bands of the prehistoric Southwestern Basket-makers. These are made of yucca and Indian hemp (*Apocynum cannabinum*) fibres. These are not wools, it is true, but are mentioned for the sake of continuity. These specimens show complicated weaves and elaborate patterns which are illustrated in references 6 and 7.

8. BRAIDING. While braiding is not weaving, braided cloth products of two kinds are mentioned here because the ends of the cords are suspended from a single point. Braided work is usually round, but can be made flat by fastening the cords to a bit of wood so that they hang side by side and not in a rounded mass. As many as several hundred cords can be braided.

There are two kinds of braided cloth fabrics, the white cotton belts of the Pueblo Indians and the colored wool sashes of many eastern tribes. The former are 4 to 8 inches wide and 4 to 5 feet long. At the ends are quite large knobs from which hang long fringes. These belts are without decoration, though the intricate braiding creates small repeated figures in the cloth. In recent years cotton string has been much used in place of native spun cords. The colored wool sashes are especially characteristic of the northeastern tribes, though also made in the southeast. They are 4 to 12 inches wide and 3 to 5 feet long. The most common form shows a complicated braid which produces a multiple zigzag design.

9. BUFFALO WOOL CLOTH was a specialty of the southern Mississippi valley tribes, though made also generally in the east as far as the buffalo ranged and to some extent on the plains. Round and flat bags, belts, garters and even blankets are mentioned. Articles of this kind are now practically non-existent, only a few specimens being known. References 37 and 38 give the available knowledge, and reference 11 describes the use of buffalo wool for decorating fibre bags. Reference 38a. describes buffalo hair ropes.

10. WARP SUSPENDED FROM AN HORIZONTAL CORD—CENTRAL STATES.

Flat bags (A) are made by this method by many tribes around the Great Lakes and in the Mississippi valley. Among them are the Chippewa, Menomini, Potawatomi, Sauk, Fox, Miami, and Kickapoo of the Algonkin stock; and the Winnebago, Iowa, Osage and Santee or eastern Sioux of the Siouan stock.

Two strong but springy rods are set firmly in the ground. Around their tops is stretched a loop of heavy cord. The warps are hung from this*cord, evenly spaced and not fastened at the bottom. The warps are enclosed by several varieties of twining with wefts of variously colored wools, the worker twisting a pair of wefts around each warp one at a time. When almost all of the warp has been covered, its loose ends are bent over and wrapped to form the top rim of the bag. The broad, endless band of cloth is lifted off the stakes and the side which was the top when in place on the stakes is sewed together to form the bottom of the bag. Women are the weavers.

The product of this process is a flat, square or oblong bag or wallet, usually about 16 by 20 inches in size, but with a wide dimensional range. Formerly these bags were made of twisted bark or plant fibre, often with patterns of buffalo hair. But since the coming of the whites commercial yarns of a rather large size have been used. The many colored patterns usually consist of rather small repeated geometrical figures arranged in three horizontal bands. Occasionally conventionalized life forms are used. Often the two sides of the bag have different patterns.

11. WARP SUSPENDED FROM AN HORIZONTAL BAR—CHILKAT. The Chilkat blankets (B) of southeastern Alaska are woven on a frame with two wooden uprights and a wooden top cross bar. Loops fastened to the bottom of the bar support a stout cord from which the warp is suspended. Each warp has a core of twisted, shredded cedar bark wrapped in mountain goat wool and is hung doubled over the top cord. The warp lengths are graduated to make a downward curving bottom edge. The loose ends of the warp are gathered in small bunches and placed in bags to keep them from tangling. When the warp is adjusted, the weaver, a woman, squats before it and begins the enclosing of the warp with wefts of mountain goat wool. A number of varieties of twining are used, but the details are too elaborate for inclusion in this leaflet. Reference 15 gives full details. The blanket is woven in sections, each one a part of the whole design field. That is, the weaving does not move across the whole warp one course at a time, but works only on as many warps as are included in one design section until it is done. Each new section is fastened with a special stitch to those already done.

The blankets are about 6 feet long, 2 feet wide on the ends and 3 feet in the center, not including the fringe, which is about 2 feet long. Besides blankets, long sleeveless shirts, small aprons shaped like the blankets, and leggings are made. Photos of these articles appear in reference 16. Shirts with sleeves were also made.

The very striking designs, in soft black, yellow and green, are copied by the women from designs painted on boards by the men. This is unusual, as most Indian designs are made without guiding patterns. These patterns represent the farthest carrying out of the design convention of the Northwest coast tribes, which is that living creatures are the most suitable subjects for design, and that while the creature depicted must be shown head on, all the rest of the body must also appear. To solve this apparently insuperable difficulty the artist

*For some bags a rod is placed across the uprights, or hung from cords fastened above. The warps hang across the rod. Bags made in this way have no seam across the bottom.

cuts the animal up in sections and lays them out on either side of the front of the body in a symmetrical arrangement. The sections are highly conventionalized, so that their interpretation necessitates the help of expert advice. Space does not permit a further description of this strange artistic device, one of the most original in all the fields of either primitive or civilized art. Full details and explanatory charts are given in references 15, 17 and 19.

This type of textile seems to have been invented by the Tsimshian tribes of west central British Columbia, the middle of the Northwest coast culture area. From this central point, it spread up and down the coast. For a long time the Chilkat division of the Tlinkit has been the only producer. The earliest blankets are said to have been plain white. Later came the introduction of stripes bearing geometrical elements, and finally the robes with animal designs described above. The latter style seems to have developed early in the last century. Of the older geometric style blankets, which lack the curved bottom, only a very few remain. A blanket of this type is one of the rarest of all Indian made articles. The weaving of the animal design type is restricted today to 3 or 4 rather inferior weavers, using mostly commercial yarn. Photos of the geometric type are found in reference 18.

12. BAR LOOM WITH TIGHT WARP—SALISH. The Salish tribes of southern British Columbia and the coast and eastern part of Washington used this type of loom. There are two uprights pierced with holes in which the two parallel, horizontal round bars are placed. They fit loosely and are tightened with wedges. Yarn was spun on unusually large spindles from mountain goat wool, the wool of a small dog bred especially for its hair, feathers and various vegetal fibres. A small rod or stout cord was fastened to the loom between the bars, and the warp tied to it. The warp passed over the bars, around the stick, and then reversed. Reference 24 has a drawing of the process. On this warp two kinds of blankets were made. One was in coarse twilled plaiting (C), apparently usually not decorated except with a few bands of red cloth threaded through it.† The color was creamy white. The other type, made in a complicated sort of twining, had elaborate patterns, involving bands of small square design elements and sharply angled multiple zigzags. A number of colors are seen in the few remaining examples of the elaborate blankets, but information about them is lacking.

The weaving was done by a seated woman. When the work had progressed downward to a point where labor became difficult, she loosened the bars and turned them and the unfinished blanket upon them to a more convenient position, or else slipped the fabric on the bars without turning them. When the whole warp was enclosed the small rod was pulled out of the blanket, allowing the two ends to separate and the fabric to fall from the bars. Narrow carrying straps were also made by the Salish by the twining method. (D).

Practically nothing is known about the history of this kind of cloth-making. Some have supposed that the Salish spindle and the loom were introduced by the whites, but since the first explorers found these two articles in use everywhere this theory seems very unlikely. The impact of white influence caused the rapid end of most native industries, so that it is a long time since the art was a flourishing one. It is possible that there are a few weavers of the coarse blankets still working, but no definite information is available.

13. TRUE LOOM. The most common form is the vertical blanket loom. This has solid top and bottom cross pieces, either fixed to upright posts as by the Navaho, or fastened to floor and ceiling, the Pueblo practice. The warp, a continuous strand, is wrapped around two slender rods laid on the ground and held apart by temporary side poles. When the warp is strung, it and the two rods are tied to the fixed cross pieces and drawn very tight. Weaving technic details are given in section 6. As before mentioned, weaving proceeds upward on the true loom in distinction to the downward motion on the other weaving frames.

The next most common form, and probably the most ancient, is the belt loom. This has a long narrow warp, one end of which is fastened to a raised support, while the other is belted around the waist of the weaver or tied to a lower support, thus assuming a sloping position. With the aid of heddles this loom produces long narrow fabrics such as belts, garters and hair ties. Belt heddles are of two types. In the first type the heddles are rods tied to the warp as in the blanket loom, while in the second the heddle looks like a small ladder with very close set rungs, usually made of split reeds. This heddle is set across the warp at right angles, both vertically and horizontally. Part of the warps pass through holes in the rungs. By moving the heddle up and down the warps passing through the holes are alternately behind and before the warps passing between the rungs, thus producing the same effect as is gained by the rod heddles, as outlined in section 6.

The least common form of the true loom, found till recently among the Pima and possibly earlier in the Southeast, is the horizontal type, which is staked out only a few inches above the ground.

The true loom is found in all forms in the Southwest, the Pueblos and Navaho using the vertical and belt types. The Mound Builders of the eastern states probably had some form of the true loom, but exact information is not available.

†Some of these coarse plaited blankets have narrow patterned borders in fairly fine twined weaves.

14. PUEBLO CLOTH-MAKING. The making of blankets and smaller cloth articles has long been carried on by the town-dwelling tribes of the Southwest. Fine cotton fabrics have been dug from prehistoric ruins; the first Spaniards reported on the cloth of the natives, and today the art is carried on vigorously by at least one Pueblo tribe, the Hopi, and to some extent by other groups.

Cotton was the raw material for prehistoric cloth and is still used today. The Hopi men weavers make white sashes, shawls, kilts, and blankets. The latter (E) are usually embroidered on the long edges with wool of many colors, black predominating. They are about 40 by 60 inches. The shawls are smaller and have broad red and blue bands on the long edges. The kilts and sashes have colored embroidery or brocade on the ends.

Hopi wool blankets traditionally have patterns of simple transverse stripes. (F) Often the main body of the blanket shows very narrow black and blue stripes with broader, more colorful bands for the principal decoration. These narrow stripes make the celebrated "Moqui" pattern. Hopi men's wearing blankets often have bold black and white checks. In recent times Navaho figured patterns have been adopted to a slight extent. Probably the best known product of the Hopi loom is the wool dress for women, an oblong rectangle of dark brown or black cloth about 40 by 48 inches, with broad bands of dark blue diamond weave on the long sides. Dark blue men's shirts are woven, as are long narrow belts, (G) garters and hair ties, usually made in combinations of red, green, white, black and blue. Knitting, learned from the Spaniards, produces footless stockings of dark blue wool. For the details of Pueblo weaving, see the last paragraph on page 40.

Weaving at the other Pueblos is very nearly gone. Some is done at Zuñi, where blankets, women's dresses and belts are still made. At some other towns belt weaving alone is done, according to the available scanty information. The Zuñi woman's dress may be distinguished from that of the Hopi by its bands of heavy blue embroidery. The Acoma dress, one of the most beautiful of Indian textiles, but very rare, has embroidered bands in various combinations of red, green, yellow and blue. See notes on page 40.

15. NAVAHO CLOTH-MAKING. The Navaho Indians of Arizona and New Mexico are the most celebrated of Indian blanket makers. There are hundreds of weavers, the vast majority women, in the large tribe of 45,000 members. The Navaho loom, described in sections 6 and 11, can produce the plain, diagonal, diamond and 2-faced fundamental weaves and the quite numerous variant forms of them. Two to four heddles are needed to execute these weaves. Patterns to every degree of elaboration can be and are produced. Curves are difficult to make and are scarce, but are sometimes woven. The native colors were formerly rather limited, but indigo blue, cochineal-red dyed baize or flannel and, in recent years, aniline dyes, all procured from the whites, made every color combination possible. Today many new native colors are being developed.

Navaho blankets are made in so many sizes that it is difficult to give full particulars. The saddle blanket, (H) about 30 by 45 inches, is a very common type. Some of the finest pieces are in this class. The "Chief" blanket with its striking broad black and white stripes and endless variations of the "nine-spot" design, is another celebrated type. Smaller blankets of similar style were also made for women. Another type is the woman's dress, two oblong blankets sewed together along the long sides. Each is about 48 by 30 inches, with black centers and broad red ends. Wearing blankets made to fit persons of every size were woven in the days before American clothes became the style. The very best of these wearing blankets, made in the first half of the last century, rank among the finest of all primitive textiles. Only a few of them are extant today. Persons whose idea of Navaho blankets is based on those offered for sale in curio stores have no conception of the very superior qualities of the best Navaho weaving. Navaho blanket designs are largely combinations of simple geometric elements and are without significance or symbolism. For further information about the making of Navaho blankets see Leaflet 3, preferably the second edition.

The Navahos, who presumably arrived in the Southwest before 1400, learned the art of weaving from the Pueblo tribes. The two types of Indians were thrown in close contact during the Pueblo revolt of 1680-1700, and it seems likely that Navaho weaving began at that time. Once begun, it developed rapidly, until by 1800 Navaho blankets were well known in the Southwest and Mexico. Sometime in this early period it was discovered that a kind of wool trade cloth from England, called baize in English and bayeta in Spanish, could be raveled to produce fine but strong threads. This cloth was dyed in several colors, of which cochineal red of several shades was the most common.

This discovery, coming at a time of great tribal prosperity and power, resulted in the Golden Age of Navaho weaving, from about 1800 to 1865. The tribal captivity in the sixties, soon afterwards followed by the introduction of machine made wool yarn, the so-called Germantown, and aniline dyes, brought forth in the eighties a crop of blankets with highly elaborate designs and many colors, often garish and brilliant. In the nineties and early years of this century rapid popularization, with its tendency to disregard quality, reduced

Navaho weaving to its lowest ebb. Since about 1915 there has been a growing tendency to revive the best in the art, so that today many very good blankets in the older styles are being made.

16. PIMA CLOTH-MAKING. The Pima of southern Arizona and their neighbors the Papago and Maricopa formerly wove blankets and belts of cotton. The art has not been practiced for about 50 years and little is known about the fabrics produced. Reference 39 gives quite full details about the unusual horizontal loom and the method of using it. The blankets were plain white without designs or colors. The belts, of which two are pictured in reference 39, somewhat resembled those of the Pueblos and Navaho. See also reference 41a

17. BELT WEAVING. As is indicated in section 13, paragraph 2, there are two forms of the belt loom, the variation being in the heddle form. On these looms are woven women's sashes 3 to 5 inches wide and 5 to 8 feet long; garters about 2 inches wide and 3 feet long; and hair ties 1 inch wide and about 4 feet long. All have quite long end fringes. The belts, (G) whether made by Pueblo or Navaho, have lengthways stripes of red, white, black, green, and occasionally blue, yellow and purple, and a center section of raised stitches forming small geometric patterns which reverse colors and forms on opposite sides of the belts. The other two articles made are much simpler, the hair ties usually not having the raised stitching. Details of the weaving are too complex for inclusion in this leaflet. Belts differ from blankets in that they show the warp on the surface, the weft being hidden, while in the case of blankets the reverse is true. There is a tubular set-up of warp on some belt looms. See reference 31.

These fabrics have never been thoroughly investigated, so that it is impossible to give detailed information. Some data appear in reference 36. Results of a study now under way will appear in a later leaflet.

Compiled by F. H. Douglas from the following sources:

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PIMA

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BRAIDING, EASTERN

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44. Material Culture of the Menomini—Skinner. Indian Notes and Monographs 20, p. 238. 1921.

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Thanks are due to Charles Amsden of the Southwest Museum of Los Angeles and to M.-R. F. Colton of the Museum of Northern Arizona of Flagstaff, for their assistance in preparing this leaflet.

Weaving at Zuñi is done by women, except for a few old men who weave in cotton. Elsewhere men wove, though there were some women weavers at Acoma. Belt weaving is quite general in the modern pueblos, and is chiefly, though not always, the work of women. Weaving at Acoma, except belt-making, is almost gone, only about six craftsmen now surviving. The last Laguna weaver is blind and feeble. The Acoma type of embroidered wool shawl was also made at Laguna. In the Rio Grande Valley pueblos, there seems to have been more weaving than was once supposed. But not enough data are yet available on which to base a statement. For Acoma weaving see reference 31a.

Leaflets in this series dealing with Pueblo weaving: Hopi, 18; Acoma, 89; Tewa, 90; Keres, Tewa and Jemez, 91; cotton textiles, 92-93; wool textiles, 94-95; Zuni, 96-97. See also the following:

Notes on Hopi Brocading—F. H. Douglas, Museum Notes, 11:4. 1938. Hopi Sash Braiding—Kate Peck Kent. Plateau, 12:3, 1940, Museum of Northern Arizona, Flagstaff. Notes on Hopi Belt Weaving at Moenkopi—Kenneth MacLeish. American Anthropologist, 42:2, 1940.

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NORMAN FEDER - Curator

Symbolism in Indian Art and the Difficulties of its Interpretation

Reprinted July 1967

LEAFLET 61

JULY, 1934

2nd Printing, December, 1937

1. INTRODUCTORY. The average person who looks at objects made by Indians has a very lively curiosity about the meanings of the designs. Sentimentally misleading books, unscrupulous or ignorant dealers, and Indians striving to please the white man, have all played upon this curiosity and have contributed to building up the idea that all Indian designs are symbols and mean something.

In an endeavor to correct this notion this leaflet attempts to define symbolism; to indicate the varieties and extent of symbolism in Indian art; and to point out the difficulties of its interpretation. Readers must realize that the statements in this brief leaflet must necessarily be very broad and general and that many exceptions to them may be found.

2. DEFINITION OF "SYMBOL". Much of the misunderstanding about symbolism arises from the idea that "design" or "pattern" and "symbol" mean the same thing. This is most emphatically not true. In art, according to Webster, "a symbol is a design or design element which stands for an idea or quality or another object, by reason of natural aptness, of association, or of convention". In other words, a design is not a symbol unless its use is accompanied by the presence in the artist's mind of a definite idea which is to be expressed by the design.

It is incorrect to call a design or a design element a symbol unless it is accurately known to fit into the definition given above. A purely decorative design is not a symbol. The difficulties of determining whether a design is symbolic or decorative are discussed in the latter portion of this leaflet.

3. REASON FOR SYMBOLISM. Illiterate native peoples of every race and period of history have, because of their ignorance of letters, turned to the making of pictures and designs for the expression of their thoughts. Such people are also great story tellers and have much interest in the animate and inanimate manifestations of nature. To preserve the memory of notable events or scenes, they have always used pictures or symbolic designs.

The Indian race is one much inclined to thoughts about religion, philosophy, virtues and vices and other abstractions, and is equally fond of adventure and war. As writing was unknown before the white man came, designs were the only means available for the expression of abstract ideas in a lasting form. As abstractions have no outward form, they cannot be represented realistically, and so must be set forth through symbols arbitrarily selected. Those tribes which make records of events in many cases are inclined to use symbolism to indicate these events. Possibly this is because realistic pictures are beyond the technical powers of the native artist. Tribal convention may also prevent the making of accurate drawings.

Because of the wide spread distribution of these practices among Indians, symbolism has been and still is a prominent factor in Indian art. Its various types are outlined in the following section.

KINDS OF SYMBOLISM

4. ABSTRACT. In the purest sense of the word, symbolism is the representation of abstract ideas or qualities by signs arbitrarily selected. Among the Indians symbols of this kind are largely placed on religious or ceremonial objects. Thus the "Hiawatha" wampum belt of the Iroquois has a design of 4 hollow squares and a solid diamond. The symbolism of these designs and their color requires several hundred words of explanation which sum up the whole idea and organization of the Iroquois League. In this type of symbolism it is not necessary that the actual appearance of the designs suggest the abstractions for which they are made to stand. Sometimes they do and sometimes they do not.

5. GEOGRAPHIC OR STORY TELLING. Some tribes, especially those of the Plains, depict scenes in nature or tell stories by means of symbolic designs. Here again arbitrary selection of symbols is found, though the degree of resemblance between the design element and the object in mind is likely to be more carefully considered than in the abstract kind of symbolism. An example of story telling by symbols is a Sioux beaded bag. On a white background is a blue diamond with forked appendages at the corners and flanked by double ended forks. There are a few extremely simple geometric elements arranged around this central figure. This whole group of geometric elements depicts a battle scene in winter and tells much about the character of the hero.

6. PART FOR WHOLE. Where space, size or other limiting factors prevent the placing of a design representing an entire object on the article being decorated, an especially prominent or characteristic part of the object may be used to stand for the whole. Thus, on the Northwest coast two large teeth often stand for the beaver, while on certain Pueblo pottery the paw stands for the bear.

7. GENEALOGICAL. On the Northwest Pacific coast the tribes have a highly perfected system of family trees. The families are believed to be descended from mythical creatures,

usually animals, birds or fish. To show the lines of descent in a family, pictures or carvings suggesting these creatures are placed on many objects belonging to the family. Through this symbolic system an understanding observer may read the family tree. The totem pole is the best known example of this kind of symbolism. See Leaflet 79-80.

8. POLITICAL. Among the Abnaki group of Maine certain designs stand for various political offices and happenings, thus, a collar of white beads on black cloth symbolizes the mourning for a dead chief, the election of a new one, the tribes of the group and their officers.

9. COLOR. A widespread practice is to have colors stand for certain things. The points of the compass are more frequently symbolized in this manner than anything else, though war, death and the like are often indicated by this means. There is a wide variation in the color symbols of the tribes. One system is not used by all.

10. MEMORY HELPS. In reciting or performing the often very long ceremonies of some tribes it has been found necessary to develop a system of symbols to assist the memories of the participants. Among the Ojibwa this system had been carried almost to the point of true hieroglyphic or picture writing before the coming of the whites interrupted its development.

11. KINDS OF OBJECTS BEARING SYMBOLIC DESIGNS. Abstract symbols of the purest type are almost entirely restricted to religious or ceremonial objects. Such objects and designs are likely to be simple, and this simplicity increases as the most central idea of the religion or ceremony is approached. Elaborate objects are not likely to show symbolism of this sort. Objects for everyday use, such as Navaho blankets, are not decorated with religious symbols. Some of the designs on non-ceremonial things may once have been religious symbols, but it is certain that such designs had lost their religious significance long before being used as decorative elements.

The other kinds of symbolism may appear on nearly any sort of object. This does not mean that all other designs are symbols. The details of tribal customs in this regard vary greatly and are too lengthy for inclusion in this leaflet.

12. DESIGNS. As designs are the means by which symbolic ideas are expressed, some information about the Indian design system is necessary for an understanding of the symbolic system.

13. DESIGN AREAS. In North America there are areas which are characterized by special design types which are found in one form or another throughout them. The boundaries of these design areas differ from and often cut through the boundaries of tribal or sometimes culture areas. All of the tribes living in an area are familiar with and use its special design elements in their varying forms. See Leaflet 62.

14. TRIBAL DESIGNS. In addition to the large groups of design elements mentioned above, there may be small groups peculiar to each separate tribe in an area. All of the workers in a tribe are more or less familiar with this stock of design elements, which are the tools of the artist just as much as are looms, awls or knives.

15. DESIGN NAMES. The Indian artist commonly gives names to the design elements as well as to more tangible tools. This naming of designs and design elements is a purely practical action to make easy the discussion and description of the patterns. The Indian sees that it is easier to call a triangle the "arrowhead" design than it is to have to draw pictures or wave the hands everytime he wishes to discuss it.

Naming a design does not make it a symbol. Design names and design meanings are not the same. The names are usually either simple descriptive terms such as "square" or "pointed", or names taken from objects in nature, such as "flying geese" or "turtle". Often the designs of the second type are not supposed to be representations of the objects named, but because of a real or fancied resemblance to some natural object were given the names after they were first completed. In other words, a native artist often invents a design with no other idea than to create a beautiful thing. When the design is done it is seen to resemble more or less some natural object and is named for it for purely practical reasons. This is not true of every Indian design, but it certainly is a widespread practice. Design naming is not done at all by some tribes.

The designs common to a design area usually have different names applied to them by each tribe in the area. But within the tribe the design names are likely to be commonly accepted, though there is a tendency for each artist to give names to suit the individual fancy. The same names are applied in some cases to several design elements of varying character and shape.

16. USES OF DESIGN ELEMENTS. They may be either decorative or symbolic. Wissler concludes that designs were primarily decorative and that symbolism has in some cases been grafted onto the decorative function. It must be realized that purely decorative designs are very common among the Indians. They are made only to gratify an esthetic impulse and have absolutely no message to give or philosophy to expound. Symbolism and decoration exist side by side. This fact is one of the great barriers to interpretation which are discussed in the following section.

DIFFICULTIES OF INTERPRETATION

★ **17. DESIGNS COMMON TO SYMBOLISM AND DECORATION.** Among many tribes the design elements peculiar to each are the only ones known to them and therefore must be used for every purpose, be it decorative or symbolic. Plains beadwork design elements are notably of this type and must serve for both kinds of patterns. There are many other tribes which find themselves in the same position. In some cases a special set of ceremonial design elements exists, a fact which enables the expert to see the purpose of the designs with some ease. Thus the Navaho have a set of designs for ceremonial sand paintings and another set for their blankets.

18. INDIVIDUAL PRACTICE. Though all the artists in any tribe tend to use the same design elements and to arrange them into patterns more or less in accord with tribal tradition, the purpose for which they make the patterns is determined only by their individual wishes, unless, of course, the special sets of elements mentioned in section 17 exist. This widespread habit of individual practice is the chief barrier to interpretation. Unless the student receives from the maker of each design accurate information about it, it is impossible for him to know whether it is decorative, or, if symbolic, what its meaning may be. Information from another member of the tribe will be useless unless it is certain that he is passing on information received from the maker. If this is not the case, the interpretation he gives will be his own idea about the design.

A thorough knowledge of the habits and ideas of the tribes will often indicate the purpose of the design and possibly something of its detailed meaning. But at best this is only good guessing. In a very few cases there are symbols recognized by all Indians in a tribe and always used to express the same ideas. The student may learn these and read their message. But such symbols are only the tiniest percentage of the whole mass of Indian design. It must also be remembered that a symbol of this sort may appear in the art of another tribe in an identical form, but with either a decorative purpose or a very different symbolic meaning.

19. SUMMARY. The Indian tribes have a number of groups of design elements, to which names are usually given for convenience only, the names having no connection with symbolic practices. These elements may be used for decoration or to express several kinds of ideas through symbolism. The wish of the individual artist determines for which of these two purposes any design is made, and its meaning if it be symbolic. Accurate interpretation is impossible unless the actual maker explains each design, though quite good guesses may be sometimes made by experts. An extremely small number of symbols are universally recognized in some individual tribes.

As far as the average person who looks at objects of Indian manufacture is concerned, it is impossible to recognize or interpret Indian designs as symbols.

Compiled from the following sources by F. H. Douglas:

OXFORD UNIVERSITY PRESS

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BUREAU OF AMERICAN ETHNOLOGY

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EXPOSITION OF INDIAN TRIBAL ARTS, INC., NEW YORK

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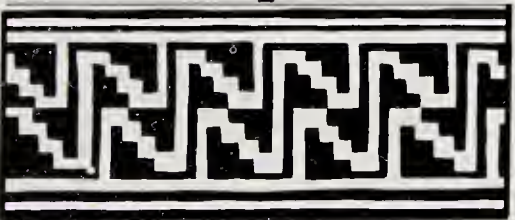
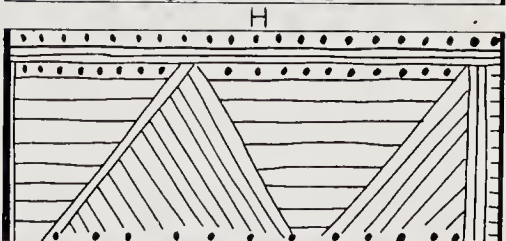
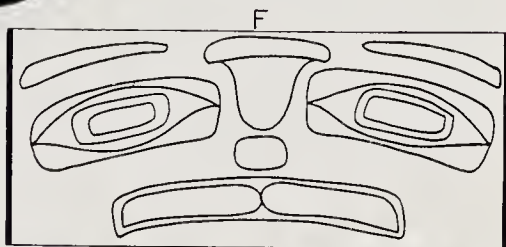
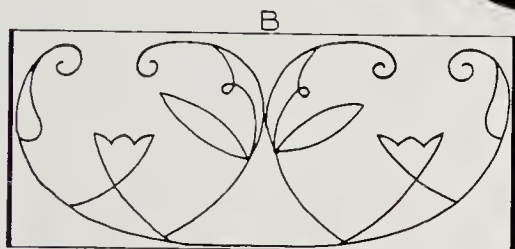
A large number of other works by many authors have been consulted, but the list is too long for inclusion in this leaflet.

Thanks are due to Kenneth Chapman, of the Laboratory of Anthropology, Santa Fe, for his suggestions regarding this leaflet.

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Typical Designs from Nine Design Areas
(Acknowledgments on last page)

DESIGN AREAS IN INDIAN ART

LEAFLET 62

JULY, 1934

Reprinted July 1967

1. INTRODUCTORY. America north of Mexico may be divided into a number of areas containing centers of artistic development. Each of these areas is marked by the presence of a design style peculiar to it, of which the elements are designs common in varying degrees to all the tribes in the area. The rather indefinite boundaries of these areas often cut through those of tribal or even culture areas. Where the influences from two or more centers meet are usually to be found designs showing combinations of these influences. Some parts of the country have no definite styles of their own, showing only combinations of the styles of adjoining areas. Thus the Oregon-Washington area makes designs influenced by the Northwest Coast, the Plains and California; the Plateau or Interior Basin of the Rockies is influenced by the Plains, the Southwest and California; the Mississippi Valley is influenced by the Plains and the Northeast.

This leaflet is a brief description of nine of the most important of these design areas. The space available only permits locating each area, giving a general statement of its most important design style, and mentioning the principal kinds of art work. The large number of variations of the basic designs and many kinds of designs not in the prevailing style must be passed over.

2. ILLUSTRATIONS. The designs shown on the cover have been picked at random from a mass of material as characteristic examples of the art of each center. It must be understood that all of the designs from each area do not resemble those shown. Many designs from any area show so little apparent resemblance to each other that only a person familiar with the basic principals of design in that area can trace the relationship. This is especially true of the Southwest, where there are dozens of kinds of designs, and furthermore, a lack of any one basic style as distinctive as is found in the Northeast or Northwest. Nevertheless a careful study of the cover will give students a good idea of the design styles discussed in what follows.

3. NORTHWEST PACIFIC COAST. The coast line of southeastern Alaska and of British Columbia is the home of a design style which is based on more or less conventionalized representations of human and animal figures, or parts of them (F). Birds and sea creatures are included in the term "animal". Carving, both in relief and in the round, painting and weaving are the means of expressing these artistic ideas. Carving is by far the most important, the greatest development of Indian sculpture being found in this area.

The special characteristic of the style is the easily curving line, not moving in regular geometric forms, but enclosing the various parts of the animal designs in subtle and irregular curves. Sharp curves are in the minority and straight or angular lines are rarely seen. Soft, rich primary colors appear in the three technics using this style. The totem pole is the best known artistic product of this area. Scattered throughout the region is an angular, geometric style which appears on basketry. See reference 14 for additional pictures and information. See Leaflet 79-80.

4. CALIFORNIA. Basketry is the great art of this area. The triangle is the foundation of a very large proportion of the designs. Groups or masses of various shaped triangles (I), or sharply angled designs which can be broken up into triangles occur more commonly than any other type of designs. Parallelograms, frequently oblong, are of quite frequent occurrence. Curves are unusual and scarce. Human and animal figures are not uncommon in the southern part of the area. See reference 1-5 for additional pictures and information.

5. SOUTHWEST. This area, which includes Arizona, New Mexico and the edges of adjoining states, is the richest in the variety of art technics and design styles. These are so numerous that a separate leaflet must be devoted to them.

To characterize the art of this area is hardly possible, but a few tentative suggestions can be made. Angular designs predominate (E). Right angles seem to be more common than other forms, perhaps because of the large number of textile arts—including basketry—which by the nature of their construction develop right-angled designs. Acute or obtuse angles are, however, very common. Curves are decidedly in the minority, though plentiful on certain kinds of pottery and basketry. Sculpture, weaving, pottery, basketry, painting, beadwork and even quillwork are all made in this area. See references 22-23 for additional pictures and information.

6. PLAINS. This area includes the territory from the Rockies to the Mississippi and from Texas to well across the Canadian border. The southern portion is very little developed artistically, but in the central and northern sections a strong school of design exists. Bead embroidery is the most important medium of expression, with painting on skin and quill embroidery as minor arts. Quillwork was once the most important art, but it has been almost entirely supplanted by beadwork in the last 100 years.

The triangle is the most widespread and characteristic design element. Here it is used alone or in simple, rather spread out combinations (C) far removed from the massed effects found in California. The tall, acute angled form is the most common, though other forms occur. Square elements are used, especially by the Blackfoot, who use the square almost exclusively. The triangular style reaches its highest development among the Sioux and Arapaho. See Leaflet 73-74.

The fondness for the triangle carries over into the field of painting, for the geometric paintings of the women on rawhide parfleches or carrying cases are largely based on the triangle. The painting art of the men is realistic and forms the secondary design style of the area. See references 17-19 for additional pictures and information. See Leaflet 77-78.

7. OHIO MOUND BUILDERS. From this area, centering in Ohio and spreading to many adjoining states, the only Indian art is that which survives from prehistoric times. The influence of this artistic center spread very widely through the Middle West. Animal sculpture, executed in stone, is the finest product of the area. The best of these carvings, which are in the form of tobacco pipes, rank very high in the list of great sculpture. Thin plates of hammered native copper (A) were cut into curving openwork designs. Similarly cut plates of mica and pottery are the other artistic products of the area.

In this area lies the western edge of the division of the whole country in which curving designs predominate. Generally speaking angular designs are found in the western half of the United States and curving designs in the eastern half.

8. SOUTHEAST. This area is that occupied by the southern states of today east of the Mississippi River. In this large territory once lived many tribes with a high native civilization. The descendants of these people now live elsewhere, but the design style of the region is preserved on the hundreds of pottery vessels which have been excavated from mounds and graves.

The most characteristic design element of this area is the curving scroll (D), appearing in many forms from the tight spiral to bands of parallel irregularly flowing lines. The designs are cut into the surface of the clay. Painted designs are not common except in the Arkansas region. The secondary design style of the area is based on animal and bird forms.

The beautiful, flowing scroll designs, so full of gentle yet ceaseless movement, display a mastery of the problems of execution and artistic expression of the highest order. It is unfortunate that they are not better known to the public. See references 20-21 for additional pictures and information.

9. GREAT LAKES. The tribes living in Canada and in the United States near the western Great Lakes, and in the upper Mississippi Valley have for something over 100 years, been developing a design style of much interest and influence.

The style is marked by semi-realistic representations of plants and flowers in bead embroidery on cloth (G). The style is the outgrowth of the meeting of an aboriginal Indian art based on curving lines (see section 10) with the floral style existing in France in the 17th and 18th centuries. While the white man has contributed the materials used in creating the designs and a good part of the artistic ideas, the Indians have made the style so much their own that it has come to be one of the leading design styles and one which is inseparably connected with the Great Lakes region.

The style is called semi-realistic because though each leaf or flower may be quite true to nature, many different kinds of fruit or flowers are often made to appear on one plant.

Designs of a similar character, though usually of a less realistic nature, are executed in silk applique embroidery on cloth and by scraping or painting on birchbark. See references 6-8 for additional pictures and information.

10. NORTHEAST. This area centers in southeastern Canada, in New Brunswick and in Maine. The design style found here has spread over a very large area in the northeastern quarter of the United States, in southern Canada as far west as the Rockies and in central Canada up to Alaska. It has even invaded the western Plains in recent years.

The design style is based on the double curve, or two incomplete incurving spirals (B). This basic design appears in an infinite number of variations which occur in bead embroidery, painted on skin or etched on birchbark. This design is the native element in the floral style described in section 9. See references 11-13 for additional pictures and information.

11. IROQUOIS. New York State was the center of a design area reaching up into southeastern Canada and south through the states adjoining New York. This style is now extinct, but is preserved on pottery vessels. The designs were incised or carved in the clay.

The style is based on the straight line (H), in marked contrast to the common eastern tendency to prefer curving designs. The straight lines appear in angular combinations of groups of parallels. A moderate degree of elaboration is usual.

While the Iroquois preferred the straight line designs for their pottery vessels, their clay pipes were modeled with a high degree of realism, human and animal forms being the preferred subjects. The modeled type of sculpture, in contrast with the carved type, found its greatest development among Indians in these Iroquois pipes. See references 9-10 for additional pictures and information.

Compiled from the following sources by F. H. Douglas:

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American Museum of Natural History, New York

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GREAT LAKES

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Museum of the American Indian, New York.

8. Material culture of the Menomini—Skinner. Indian Notes & Monographs, No. 20. 1921.

IROQUOIS

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9. Aboriginal pottery of the eastern United States—Holmes. 20th Annual Report. 1903.

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NORTHEAST

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11. The double-curve motive in northeastern Algonkin art—Speck. Memoir 42. 1914.

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OHIO MOUND-BUILDERS

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15. The Mound-Builders—Shetrone. 1930.

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PLAINS

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19. Crow Indian art—Lowie. Anthropological Papers, Vol. 21, Part 4. 1922.

SOUTHEAST

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Academy of Natural Sciences of Philadelphia.

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SOUTHWEST

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22. Indians of the Southwest—Goddard. Handbook No. 2, 4th edition. 1931.

Phillips Academy, Andover, Massachusetts.

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Smithsonian Institution.

25. Aspects of aboriginal decorative art in America—Krieger. Annual Report for 1930.

Acknowledgments of cover designs:

A, Field Museum; B, Canada Geological Survey; C, American Museum of Natural History; D and G, Bureau of American Ethnology; E, Phillips Academy, Andover; F, Primitive Art, Boas; H, New York State Museum; I, University of California.

DENVER ART MUSEUM

1300 LOGAN STREET, DENVER, COLORADO

DEPARTMENT OF INDIAN ART

NORMAN FEDER, *Curator*

INDIAN VEGETABLE DYES

Part I

LEAFLET 63

Reprinted December 1969

1. INTRODUCTORY. The American Indians were found by the various white explorers to be using a very large number of plants as sources for dyes, stains and paints in a wide range of colors. Many of these formulas and practices are no longer used, others are still in existence, and a few new ones have been added to the list in recent times.

A complete list of all plants and of the dyes produced from them would be very long, and the compiling of it a tedious task. Nevertheless it should be done some day. To this end leaflets in this series will be issued from time to time giving partial lists and the references in which the data are found, so that some day the tireless worker who undertakes the major task will have his raw materials in more convenient form.

2. METHODS OF USE. The large majority of native vegetal dyes were made by boiling the plant materials. Sometimes the objects to be dyed were boiled with the dye, and sometimes not. The details vary too greatly for inclusion in this leaflet. Where boiling was not used, the text so states.

| SCIENTIFIC NAME | COMMON NAME | PART OF PLANT | OBJECT COLORED | TRIBE |
|-----------------------------------|------------------------------|--|--------------------------------------|---|
| BLACK | | | | |
| <i>Acer saccharinum</i> | Soft maple | Twigs and bark (With ferrous clay) | Hides | Winnebago and Omaha |
| <i>Acer</i> | Maple | Inner bark and leaves (with clay) | Porcupine quills | Omaha |
| <i>Castilleja integra</i> | Indian paint brush | Bark of root (with minerals) | Deerskin | Zuni |
| <i>Cornus canadensis</i> | Western flowering dogwood | Branches and bark | Basket material | Thompson River Salish |
| <i>Corylus americana</i> | Hazel | Inner bark (with butternut) | Rushes | Ojibwa |
| <i>Dondia suffructens</i> | Sea blight | Whole plant | Rushes for basketry | Cahuilla |
| <i>Juglans cinerea</i> | Butternut | Inner bark (with hazel) | Rushes | Ojibwa |
| <i>Juglans</i> | Butternut | Bark | Rushes for mats; porcupine quills | Menomini |
| <i>Juglans nigra</i> | Black walnut | Root | | Ponca, Pawnee, Winnebago, Sioux Omaha |
| <i>Quercus lobata</i> | California white oak | Bark (with rusty iron) | Basket material | Maidu |
| <i>Quercus macro- carpa</i> | Bur oak | Inner bark (with hazel burs, butter- nut bark and earth) | Porcupine quills | Ojibwa |
| <i>Rhus diversiloba</i> | Poison oak | Juice | Basket material | Pomo |
| <i>Sambucus mexicana</i> | Elder | Berry stems | Basket material | Cahuilla |
| BLUE | | | | |
| <i>Commandra pallida</i> | | Roots | Basket material | Thompson River Salish |
| <i>Corylus</i> | Hazel | Roots | | Thompson River Salish |
| <i>Delphinium men- ziesii</i> | Larkspur | Flowers | Clothing | Thompson River Salish |
| <i>Delphinium scapo- sum</i> | Larkspur | Flowers | Basket material | Hopi |
| <i>Helianthus petiolaris</i> | Sunflower | Seeds | Basket material | Hopi |
| BROWN | | | | |
| <i>Alnus</i> | Alder | Bark | Seal fur | Eskimo |
| <i>Juglans</i> | Butternut | Bark | Leather | Menomini |
| <i>Parosela emoryi</i> | Parosela | Branches | Rushes for basketry | Cahuilla |
| GRAY | | | | |
| <i>Atriples cenescens</i> | | Ashes of burnt plant | Corn bread | Hopi |

| SCIENTIFIC NAME | COMMON NAME | PART OF PLANT | OBJECT COLORED | TRIBE |
|---|--------------------------------|--|-------------------------------|--------------------------|
| GREEN | | | | |
| Algae | Water scum | Whole plant | | Thompson River Salish |
| Algae | Pond scum | Whole plant | Wooden objects | Plains |
| Chenopodium album | Lamb's quarter | Whole plant (?) | Bows and arrows | Pawnee |
| Thuja plicata | Giant arbor vitae | Twigs and leaves | | Thompson River Salish |
| ORANGE | | | | |
| Cuscuta paradoxa | Dodder or Love vine | Whole plant | Feathers | Pawnee |
| PINK | | | | |
| Amaranthus palmeri | Amaranth | Flowers | Basketry | Hopi |
| Chenopodium | | | Basketry | Thompson River Salish |
| PURPLE | | | | |
| Acer | Maple | Rotted wood | Porcupine quills | Ojibwa |
| Berberis fremontii | Barberry | Berries | Body and ceremonial objects | Zuni |
| Rubus leucodermis | Whitebark raspberry | Berries | | Thompson River Salish |
| Vaccinium membranaceum | Blueberry | Berries | Basketry | Tlinkit |
| | (See also the plants | under PINK, which produce purple also.) | | |
| RED | | | | |
| Abies concolor | White fir | Bark | Deerskin | Tewa |
| Alnus | Alder | Bark | Basketry | Thompson River Salish |
| Alnus incana | Alder | Inner bark (with other plants) | Porcupine quills | Ojibwa |
| Alnus incana and Cerocarpus parvifolius | Alder and Mountain mahogany | Bark of 1st; Root of 2nd | Buckskin; wool | Navaho |
| Alnus oregona | Alder | Bark | Leather | Thompson River Salish |
| Alnus rhombifolia | Alder | Bark | Basketry | Yuki, Hupa |
| Alnus tenuifolia | Alder | Bark | Deerskin | Zuni |
| Amaranthus palmeri | Amaranth | Seeds | Corn bread | Hopi |
| Amaranthus paniculatus | Amaranth | Seeds | Corn bread | Hopi |
| Betula papyrifera | White birch | Inner bark (with dogwood, oak and cedar bark ashes) | Porcupine quills | Ojibwa |
| Blitum capitatum | Strawberry blight | Calyx (not boiled) | Body, wood, leather | Thompson River Salish |
| Coreopsis cardaminifolia | Coreopsis | Flowers | Yarn | Zuni |
| Cornus stolonifera | Red-osier dogwood | Inner bark (with birch, oak and ashes of cedar bark) | Porcupine quills | Ojibwa |
| Fungus, unidentified | | | | Thompson River Salish |
| Juniperus virginiana | Cedar | Inner bark | Matting | Ojibwa |
| Lithospermum angustifolium | Indian paint | Roots (not boiled) | Leather and body | Thompson River Salish |
| Lithospermum carolinense | Puccoon | Dried root (with ochre) | Porcupine quills | Ojibwa |
| Orthocarpus luteus | Yellow orthocarpus | Whole plant (not boiled) | Gopher skins | Blackfoot |
| Phytolacca americana | Pokeberry, inkberry or redweed | Berry (not boiled) | Horses and personal ornaments | Oto, Pawnee, Ponca |

| SCIENTIFIC NAME | COMMON NAME | PART OF PLANT | OBJECT COLORED | TRIBE |
|---|----------------|------------------------------|------------------------------------|--|
| RED—(Cont.) | | | | |
| <i>Rhus glabra</i> | Smooth sumac | Berry | | Thompson River Salish |
| <i>Sanguinaria cana-</i> <i>densis</i> | Bloodroot | Root | Quills, rattles, body matting | Menomini, Ponca, Winnebago, Omaha |
| <i>Thelesperma gracile</i> | Thelesperma | Whole plant | Basketry | Hopi |
| <i>Tsuga</i> | Hemlock | Bark | Porcupine quills, matting | Menomini |
| YELLOW | | | | |
| <i>Alnus incana</i> | Alder | Inner bark | Porcupine quills | Ojibwa |
| <i>Berberis nervosa</i> | Oregon grape | Twigs and bark | Basketry | Klikitat, Snohomish, Hupa, Thompson River Salish |
| <i>Bigelovia graveolus</i> | Rabbit brush | Flowers | Wool | Navaho |
| <i>Bigelovia howardii</i> | Rabbit brush | Flowers | Body | Hopi |
| <i>Carthamus tinctor-</i> <i>rius</i> | False saffron | | Basketry, bread | Hopi |
| <i>Chrysothamnus</i> <i>bigelovii</i> | Rabbit brush | Flowers | Wool | Zuni, Tewa |
| <i>Coptis trifolia</i> | Gold thread | Root | Porcupine quills | Ojibwa |
| <i>Evernia vulpina</i> | Wolf moss | Whole plant | Porcupine quills basketry, body | Blackfoot, Klamath, Tlinkit, Thompson River Salish, Hupa |
| <i>Populus sargentii</i> | Cottonwood | Seed vessels or leaf buds | Feathers on arrows | Pawnee, Omaha, Dakota |
| <i>Psilostrophe tages-</i> <i>tina</i> | Thistle family | Flowers | Masks, body | Zuni |
| <i>Rhus</i> | Sumac | Roots | Porcupine quills, matting | Menomini |
| <i>Rhus glabra</i> | Smooth sumac | Roots | | Omaha, Winnebago |
| <i>Usnea barbata</i> | Lichen | Whole plant | Porcupine quills | Dakota |

Compiled from the following sources by Jessie Matson, under the direction of F. H. Douglas:

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BUREAU OF AMERICAN ETHNOLOGY

2. Ethnobotany of the Zuni Indians—Stevenson. 30th Annual Report, 1915
3. Uses of plants by the Indians of the Missouri region—Gilmore. 33rd Annual Report, 1919
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MACMILLAN AND CO., LONDON

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DENVER ART MUSEUM

100 W. 14th Ave. Parkway, Denver, Colorado 80204

DEPARTMENT OF INDIAN ART

NORMAN FEDER, *Curator*



APACHE INDIAN COILED BASKETRY

LEAFLET 64

DECEMBER, 1934

Reprinted May, 1971

1. THE APACHE INDIANS belong to the Athabaskan linguistic stock and are its southernmost members. The location and population of those bands which make basketry are as follows. The several bands of the western Apache live on the San Carlos, Fort Apache and Camp Verde reservations in east central Arizona and number about 6,000. The Jicarilla (He-ka-rée-ya) band lives in north central New Mexico and has about 600 members. The Mescalero (Mes-ka-láir-o) band lives in south central New Mexico and numbers about 450. For further details about the tribe see Leaflet 16.

2. TOOLS. The steel or iron awl set in a wooden handle is the principal tool. It is used by all groups. Formerly awls were made of bone. Steel knives are used to prepare material, split sewing splints, cut off loose ends and wherever cutting is necessary.

WESTERN BANDS

3. FORMS. Bowls with sides flaring at various angles range from 2 to 10 inches in depth and from 4 to 30 inches in diameter (A, B, C, D). This is the oldest form. Jars with the general form of a smallish bottom, sides flaring to a high, rather flat shoulder, constricted neck and fairly high rim are common (E). Some forms show a constricted mid-section. Jars range in size from 6 to 40 inches in diameter and from 10 to 50 inches in height. The very large examples are quite rare, the average being about 18 by 24. A good many other forms have been made in recent times, all showing white influence. It is impossible to list them here. They may be recognized by their appearance as outlined in this leaflet.

4. USES. The variously shaped bowls are used for household utensils, "holding meal, winnowing grain, parching corn, boiling food, mashing berries, serving stews, and holding water for cooking, washing and laundry" (Ref. 1, p. 166). Bowls are used in ceremonies for holding sacred meal, clay paint and seed corn, but there are no exclusively ceremonial bowls. The jars are for the storage of any dry materials, though many are made only for sale.

5. MATERIALS. The split and peeled twigs of 2 varieties of willow (*Salix nigra* and *lasianдра*) and of cottonwood (*Populus fremontii*) are used for the sewing splints which form the outer surface of the baskets. Peeled but whole twigs of the same kinds are used for the foundation rods. Willow is by far the most common material. Mulberry (*Morus*) was once much used. It ages to a silvery grey. The black is the covering of the seed pod of the devil's claw (*Martynia proboscidea* or *louisiana*). The red rarely seen on modern baskets is the root bark of the yucca (*Yucca elata* or *baccata*).

6. PREPARATION OF MATERIALS. Twigs are usually gathered in the spring, when the sap is flowing, though sometimes they are cut in the fall. They are peeled and those to be used for sewing splints are split into 3 sections, the teeth being used to hold one section. The splints are given an even size by scraping, tied in coiled bundles, and stored for future use. The devil's claw pods are gathered in the fall when dry, split and tied in bundles.

7. TECHNIC. Baskets are made by women. Before being used the materials are soaked in water or wet sand to make them pliable. Three unsplit rods are placed in a triangular formation. They are wrapped for a short distance with a sewing splint. This wrapped section is then bent back on itself. The awl is used to pierce the wrapped section. The sewing splint is passed through this hole, around the unsewed section, and back through another hole by the side of the first, thus fastening the unwrapped section to that already bound. This process is repeated until the basket is done. New splints and rods are inserted as needed.

Coils move from right to left unless made by a left-handed worker. Shaping is done by sewing the new coils at various positions between the top and side of those already done. The finished side of a basket is that facing the maker, hence jars are sewed on the edge nearest the worker from the outside, while the bowls are worked from the inside on the far edge. The rim is bound over and over with black. The herring-bone rim finish is rarely used. Black sewing splints are introduced to form the designs according to a plan previously worked out in the worker's mind.

8. DESIGN. Western Apache basket design (A-E) is marked by the presence of vertical, zigzag, or diagonal patterns starting from a black circular center and made up of combinations of small black blocks. The zigzag designs are often made with several parallels. These classes of designs are characterized by great vitality and animation. More static designs are the common all-over networks, horizontal circles—rare on bowls but common on jars—and many small isolated figures, either conventionalized humans and animals or geometric abstractions such as crosses, diamonds—either single or in chains—chevrons and terraced figures. These small figures are often placed at random, with no relation to the general design plan. As such they serve to relieve the tension of the highly dynamic main designs. These elaborate designs are rather modern, perhaps since 1890. The older designs are much simpler. About 1903 a native religious cult introduced star and crescent designs.

9. SYMBOLISM of a religious or mythological nature seems to exist, but when and where are questions which cannot be answered. Certain design elements have names, such as “lightning”, “spotted”, “measure of grain”, “cloud” or “trails”, but these seem to be merely for convenience. Certain combinations of elements may illustrate a myth or religious idea. But there is no universal practice in these matters, so that the proof of the existence of symbolism, let alone its interpretation, are practically impossible. Ref. I, p. 197 ff. discusses the matter quite fully.

10. APPEARANCE. Western Apache basketry may be distinguished by its black-and-tan color, the animation of its designs, and by the small, round corrugations of its coils. The stitches are fine and even.

MESCALERO

11. FORMS. Shallow bowls with widely flaring sides are the most common shape (F). Bowls range in size from about 3 to 8 inches in depth and from about 12 to 24 inches in diameter. The tribe also makes a very few more or less cylindrical shapes with a sloping shoulder and rather small mouth with quite high neck.

12. MATERIALS. The sewing material is made of the split leaves of the narrow-leaved yucca. When unbleached these are a greyish green, partly bleached, a yellow, and wholly bleached, a creamy white. The root of the same plant produces a brown-red. No information is available about the twigs and bundle material used in the foundation.

13. TECHNIC. The coils have for foundation either 2 rods and a bundle of split leaves, 3 rods and a bundle or a wide slat and bundle, all of which are arranged vertically, not triangularly as among the western bands. This gives a thin, wide, and transversely flexible coil, one of the main characteristics of this basketry. The general method of manufacture is the same as for the western Apache.

14. DESIGN. Mescalero design is very simple. Large single stars, terraced pyramids, diamonds and squares make up most of the designs. A common arrangement has a green background and a single star in a light shade edged with the brown.

15. SYMBOLISM. Information on this point is limited to one statement that there is a possibility some of the designs may be in the nature of prayers or charms for the benefit of the maker. The designs are named.

16. APPEARANCE. Mescalero coiled baskets are unique and cannot be mistaken for any other type. Their mottled surface of soft greens, yellows, creams and browns, their thin, flat and loose coils, their coarse irregular stitching and their large simple designs make up a combination not found elsewhere.

JICARILLA

17. FORMS. Rather deep bowls from 10 to 30 inches in diameter and from 4 to 8 inches in depth represent the most common form (G). A peculiarity of these bowls is the making of loop handles on the rim, either in pairs or in a continuous series all around the rim. These handles are not extra pieces added to the basket, but are made by pulling the outer coils out of line. Deep cylindrical forms are the next most common (H). They range in height from about 10 to 36 inches in height and from 10 to 24 inches in diameter. They

often have lids. Some of these deep baskets are shaped like wash boilers, with straight sides and rounded ends. Jug-shaped water bottles (J) and fish creels are also made. All but the bowls and bottles are probably due to white influence.

18. MATERIALS. Both sumac and willow are used for foundation rods and sewing splints. Sumac is more characteristic of the Jicarilla. It has a sheen that the willow lacks, and turns into a medium yellow-brown.

19. TECHNIC. 3 or 5 rods are used for the foundation. This makes the coils heavier than in other Apache types, a determining point in identification. The rods are arranged in a mass, as by the western bands. The general method of manufacture is as outlined for the western Apache. The rims usually have a braided finish, though over-and-over stitching is used.

20. DESIGN. Massive simplicity characterizes Jicarilla design. Large single stars, crosses with little blocks on the corners, terraced diamonds, zigzags and large, conventionalized animals are common elements. All elements are large and only a very few are used on each basket. They are often made up of several narrow bands paralleling each other, giving a rainbow effect. The fact that they are colored makes the identification of Jicarilla basketry easy. Formerly native dyes were used, but for many years brilliant anilines have been all too evident. They age, however, into pleasant hues.

21. DYES. The old native dyes were red from mountain mahogany bark and yellow from barberry root.

22. SYMBOLISM. The very scanty available data indicate that the designs are named, but give the impression that there is no symbolism. Too little is known, however, to justify any statement.

23. APPEARANCE. Jicarilla basketry may be distinguished by its heavy, oval coils, its rather coarse stitching, the loop handles on bowls, the large simple design elements and especially by the bright dyed colors standing out against the somewhat shiny brown background of the sumac. Even where the white willow is used, the other features make identification possible.

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All but 4 have many photographs. 1 and 3 are especially valuable.

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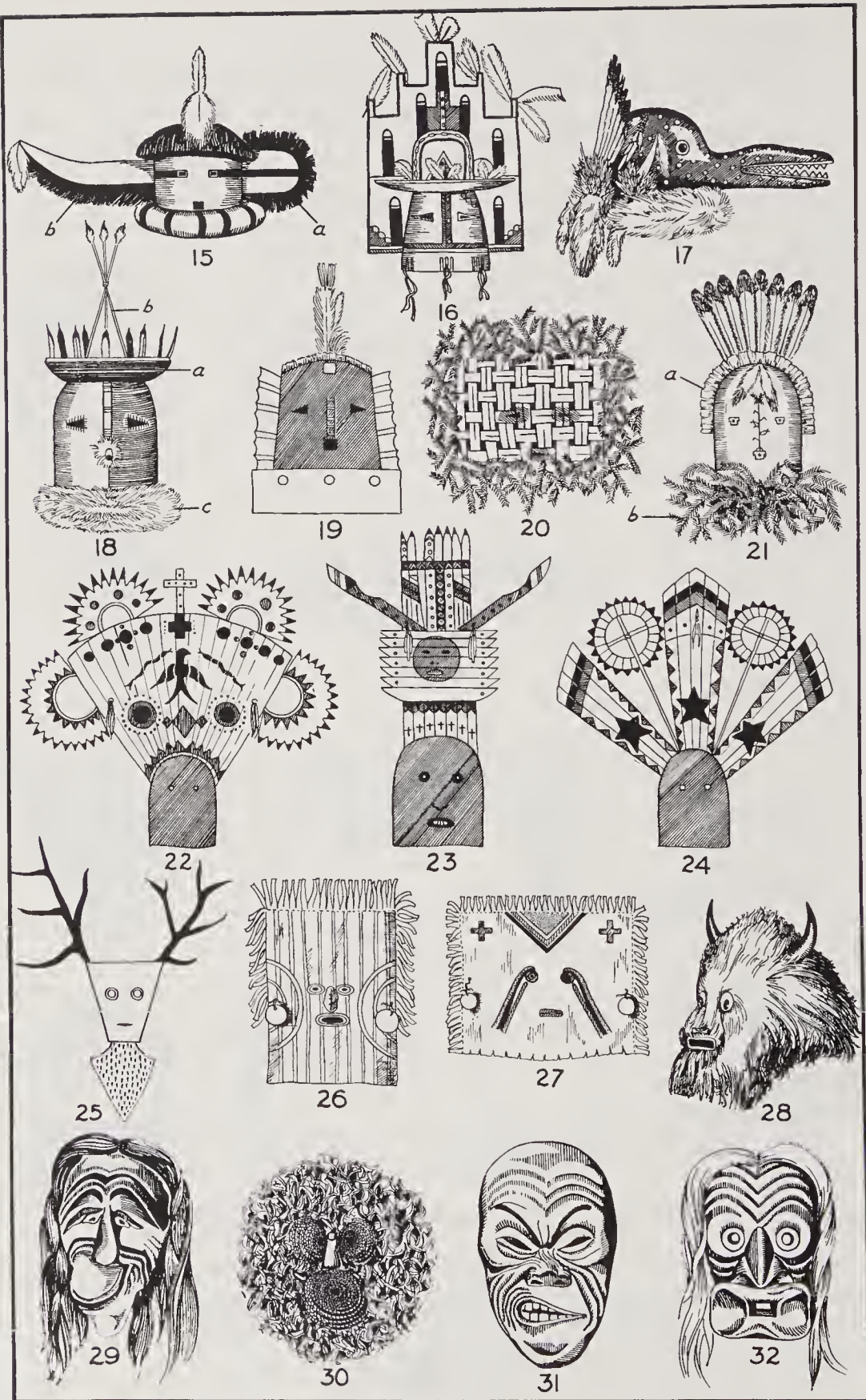


(Acknowledgments on last page)

TYPES OF INDIAN MASKS

LEAFLET 65-66
DECEMBER, 1935

Reprinted July 1967



1. INTRODUCTORY. The use of masks to cover faces and heads is a widespread practice among aboriginal peoples all over the world. The primary purpose of this masking is religious. Native peoples commonly believe that the wearing of a mask representing a divine or mythological being either turns the wearer into that being or at least makes him the seat of its power or spirit. There are many variations to this belief, but its basic thought is the chief reason for mask wearing. Masks are also worn to inspire amusement or fear or to provide protection against attack. Mere facial concealment, the common reason for masking among civilized people, has little if any place in primitive life.

This leaflet is a description of the types of masks used by Indians in America north of Mexico. The location of the groups using these types and the appearance of the masks can only be discussed, space not permitting any account of the reasons for, and customs connected with, masking.

2. ESKIMO. Masking reaches its fullest development in this race among the tribes of Alaska. Masks are reported from other Eskimo groups but as unusual rather than common. How long the Eskimo have been using masks is not known, nor is the origin of the practice. Masks were noted on the Aleutian Islands in the 18th century, but not on the mainland before about 75 years ago.

Eskimo masks are carved from wood. The treatment of features and planes is notably simple and elemental. They are almost always very shallow and cover only the face. They are held in place by cords around the head and by gripping interior projections with the teeth. Paint is much used in a few basic colors. Single colors are used over large areas. Large dots of contrasting colors are often placed over these areas. Most of the masks represent human faces. The features are often distorted (3). Eyes are of different shapes in the same face, noses and mouths are twisted out of line and even the whole face is pulled out of shape. Quite realistic faces are not uncommon, however. Teeth are indicated by widely spaced pegs (3). A number of masks represent animal and bird heads, rather simply indicated (1). Some show human or animal bodies with projecting limbs and a human face carved on the back or belly (4), or have pairs of hands, bird heads and the like projecting from their edges (2). The most complicated type has one face concealed behind another which can be manipulated by strings so as to open and reveal the inner face. Certain masks are too large to be worn. They are hung from the roof and moved by men behind them. Ruffs or halos of hair, fur or feathers are extremely common (1-4). This feature is an outstanding one on Eskimo masks. An expression of gay and childlike humor is very characteristic of the masks of this race.

Masks are carved by men and are worn at dance festivals held in large buildings erected especially for ceremonial use. These dances are still performed.

3. NORTHWEST COAST. Carved wooden masks reach their greatest development among the tribes of the coast of British Columbia and southern Alaska, the Tlinkit, Haida, Tsimshian, Bella Coola, Kwakiutl, Nootka, Makah and Coast Salish. See Leaflets 1 and 72 for further details about these tribes. Of the origin of the practice nothing is known. The first explorers in the late 18th century found it well established. The introduction of many metal tools in the late 18th and early 19th centuries greatly stimulated all sorts of carving, including that of masks.

Masks in this region are deep enough to cover the sides of the head. The top and back are not usually covered, though certain types which are more headdresses than masks cover only the top. Masks of ordinary size are held in place with cords tied around the head and neck, but many are so large as to need body harness for support. Shredded cedar bark (9-A) often covers the junction between head and mask. The range in size and shape is large. It seems that about two-thirds of the masks represent man-like faces and the rest those of birds (8, 9), animals (10) and fishes, some real and some imaginary. Elaborate, relatively high relief is more common than not (6, 7, 10), and paint is plentiful. Reds, blues, greens, black and white are the colors most used. Heavy painted black eyebrows are a very common feature. While the tendency is toward the grotesque (7), certain masks show a high degree of realism, some being undoubtedly portraits (5). Much ingenuity is shown in that type of

mask which has parts moved by cords controlled by the wearer (9), causing eyes to roll, beaks to open and shut, eyebrows to wiggle and tongues to move. Like the Eskimo these tribes make double masks (6), the outer of which can be opened to show the inner face. The most impressive masks are possibly the carvings of ravens' heads used by the Kwakiutl (9), which are 3 to 4 feet long.

A high degree of artistic quality and technical excellence is exhibited in these carvings. The general character of the masks is about the same throughout the region, but there are tribal peculiarities too detailed for discussion in this leaflet. The influence of this great center of masking has spread to some extent among the tribes of the adjacent interior and to the south. Masks are carved by men and are worn principally by them, though women and children may do so on occasion. Masks are used till worn out and are often repainted. Mask using is not as common as formerly in this region, but has not been entirely given up.

4. PUEBLO. It has been suggested that because no masks have been found in the ruins of prehistoric villages the practice was introduced among the pueblos by the Spanish. But references in very early Spanish writings to masks, and their presence in pictographs make it clear that the custom is an aboriginal one. Masks are used today by all Pueblo groups in Arizona and New Mexico. See Leaflets 4, 6, 8, 11, 13, 14, 17, 18, 30, 35, 43-44, 45-46, 47, 53-54 and 59-60, for additional details about these tribes.

Pueblo masks are made of leather in two basic forms: cylinders with one end closed and large enough to cover the whole head (11 and 15); and bands something like our dominos which cover only the face (14). The latter almost always have beards of hair or fringed leather, and are held in place with thongs passing around the head. There seems to be a tendency for the masks of the western pueblos, Hopi (11, 16), Zuñi (15) and Acoma, to be round-topped, and for those on the Rio Grande to be flat-topped (12, 13). Most masks have more or less human features, principally indicated by paint and openings. All masks are painted in a great variety of color and pattern. They are also trimmed with feathers, (12, 13, 15, 16, 17), beads, hair (15), pieces of basketry (11), representations of jimson-weed flowers made of wood or yarn (11) and various other adjuncts. Certain masks have thin structures of carved wood or of cloth covered sticks (16) projecting from top and sides. Such structures are either semi-circular or terraced (16), and usually bear painted designs and feathers. Many of the cylindrical masks have large collars of fur (17) or spruce twigs around their bottoms. Large slab-shaped ears of wood (15-a), various kinds of horns (15-b), and cylindrical snouts (12), all of many shapes and sizes, are used. Such adjuncts may only be attached to one side of the mask. Eyes are holes of various shapes cut through the leather or large balls goggling from their sockets. Mouths are holes ringed with skin or are indicated with braided corn husk suggesting teeth. Noses are made of stuffed skin or of corn-cobs. A few masks have great snouts (17), sometimes hollow and movable. The fact that there are at least five hundred masks in the various pueblos, each with distinctive individual characteristics, indicates the bewildering variety of Pueblo masks.

The use of masks is strongly established among the Pueblos of today, especially in the western villages. Masks are made by men and in most cases worn by them, though in some ceremonies women are masked. Some masks are newly made for each occasion, others are used in particular ceremonies until worn out. In other cases the masks are reduced to their fundamental cylinders after each period of use and redecorated in other styles as needs arise. Among the Hopi and Zuñi masked dances are held outdoors in public. In the eastern towns masked dances are either held in kivas or ceremonial rooms or outdoors with all whites rigidly excluded. In the villages of the Tewa tribe on the Rio Grande all masked dances seem to be held in the kivas.

5. NAVAHO. Nothing sure is known about the origin of Navaho masks, but it is generally felt that the tribe adopted the custom from the Pueblos at some time after its arrival in the Southwest perhaps six or seven hundred years ago. Definite information about Navaho masks only goes back to about 1880. On the basis of the available information, which does not cover all Navaho ceremonies, it appears that there are about two dozen different masks of two general types. These are an inverted bag of skin covering the head (18, 21), for male

characters, and a stiff leather domino covering only the face (19), for female characters. Both types are painted quite elaborately and trimmed with feathers (18, 19, 21), fur, hair (21-a), sections of baskets (18-a) and various wooden accessories (18-b). Collars of fur (18-c) or spruce twigs (21-b) are used. Small openings are cut for eyes and mouths. Certain masks have round wooden or leather beaks, some cylindrical and some pointed. One form of the domino type is made of plaited yucca leaves, fringed with spruce (20).

Navaho masks are made in sets by medicine men and are used until worn out. Each medicine man owns a set which he carries with him to the dances over which he presides. Masks are worn by men, though there is an occasional woman so costumed. They are still frequently used by the Navaho. See Leaflets 3, 9, 15, 21, 43-44, and 59-60 for additional details about the tribe. The Navaho live today in Arizona and New Mexico.

6. APACHE. Even less is known about Apache masks and their origin than about those of the Navaho. They resemble Pueblo masks in having a bag which covers the whole head, but otherwise there is no likeness. Until further studies are made and published nothing definite can be said about their origin. Masks are used at the present time. The Apache live in Arizona and New Mexico. See Leaflets 16 and 64 for additional details about the tribe.

The bag which covers the head is today made of cloth (22, 23, 24), on which eyes and sometimes nose or mouth are crudely indicated with openings and paint. Inside the bag is a stiff rod which passes over the head and under the chin. This is presumably the means of keeping the great fan-like tops erect. These fans are the most characteristic feature of Apache masks. They are made of thin, narrow strips of yucca wood set side by side and held in place with cross pieces of the same material. The fans are decorated with painted or pierced designs and with small bunches of wood pendants. Besides the three forms of fans illustrated there is one with a large center section flanked by smaller upright sections of the same type, the whole resembling a large E on its back. The great fans represent the spread tails of birds. Sometimes actual turkey tails are used instead of the fans. There is a clown mask, a bag crowned with a cross or horns.

Apache masks are made in sets by medicine men and used until worn out or until their magic power is thought to have disappeared. They are worn by "devil" dancers, 4 to 6 in number, in healing ceremonies.

7. PLAINS. Masks were not common in the Plains area as a whole and nowhere in that area was the practice highly developed. It centered in the upper Missouri valley. Two types were used. Certain men's societies with animal names made masks from actual animal heads or from skin to represent them. In this group were the Arikara, Hidatsa, Mandan, Plains-Cree, Plains-Ojibway or Bungi, the Sisseton or eastern Sioux and the Oglala Sioux. All of these made masks from whole buffalo heads (28), though possibly those of the last two tribes did not completely cover the face. The Hidatsa used blue glass beads for eyes and painted the nose of the mask blue. The Oglala Sioux had masks representing the heads of elk (25) and of black-tail deer. These were made of soft skin stretched on a frame. The antlers were tree boughs covered with fur to suggest the velvet. This tribe also had a wolf society which used painted rawhide masks.

The second type of mask was used by clowns. It is reported from the Crow, Assiniboin, Plains-Cree and Plains-Ojibway.* These masks were crudely made cloth bags trimmed with paint and fringes (26, 27). Doubtless skin was formerly used in place of cloth. Most of them had large, hooked noses. Plains masks were made by men and worn by them alone. The Plains-Cree were an exception, for their women wore buffalo masks. There are no available data to indicate whether Plains masks are still used. See Leaflets 2, 7, 20, 23, 24, 37-38 and 41 for additional details about the Plains tribes.

8. IROQUOIS. The origin of Iroquois masks is not known. They have not been found in excavations, but the fact that they were reported by almost the first explorers to meet

*Comanche Sun Dance clowns wore mask-like helmets of willow twigs, with false noses of mud. Ralph Linton. *American Anthropologist*, Vol. 37, No. 3. 1935.

the tribe in the early 17th century indicates that the practice is an aboriginal one. The masks are of two types, both of which cover only the face. The more common are carved in wood (29, 31, 32). In order to keep within them the spirit of the tree the beginning of carving was made on a living tree, the basswood being usually chosen. The masks are supposed to represent evil, bodiless spirits called "Flying Heads". They are made and worn by the men members of the False Face society, an organization of healers. Most of the masks have grotesque and often highly distorted human features (29, 32), though there are some specimens with beast-like snouts and teeth. Carving is in high relief. Deep wrinkles are a notable feature. The eye holes are outlined by wide rings of sheet metal. Horse hair, either black or white, is fastened to the top of the masks and hangs in long locks down each side for 6 or 8 inches below the bottom. Some specimens have hair on one side only. The masks are painted a solid color with no patterns, the colors being black or red, or, less commonly, both colors divided by a vertical center line. There are also unpainted masks said to be worn by clowns (31). The few examples seen have rather Oriental features with slanting eyes and black painted brows.

The second type is made of braided strips of corn husks sewn together into crude representations of the human face (30). Not all have the husk fringe shown in (30) and some are much less grotesque than this example. Both types of masks are held in place by cords around the head. Iroquois masks are still used. A revival of mask carving has recently been begun by the F. E. R. A. under the direction of the Rochester Museum. See Leaflets 12, 26, 31 for additional details about the tribe. The Iroquois live in New York and Ontario.

9. MASKS AMONG OTHER TRIBES. Mask using was not restricted to the groups so far mentioned, though they are the only ones who have made extensive use of the custom, at least in fairly recent times. It has not been possible to comb all of the sources for data on the use of masks, but the following other occurrences have been noted. In the Southwest two wooden masks were found among the Pima; cloth bag and painted gourd masks are used by the Papago and Maricopa; and the Havasupai formerly had one dance in which Pueblo type masks were used. The use of masks by tribes near the Northwest Coast group has been mentioned in Section 3. The Tinne of Alaska use masks of the Eskimo type. In the Great Lakes region a birchbark mask is mentioned from the Menomini. In the East masks of the Iroquois carved wood type were used by the Delaware, Nanticoke, the Missisauga band of Ojibway and other Algonkin tribes, and by the Cherokee. From the mounds of the prehistoric peoples in the Middle West and Southeast have come copper plates of figures wearing eagle masks very suggestive of Mexico. On Key Marco, Florida, a number of quite realistic carved wooden masks were found while excavating mounds.

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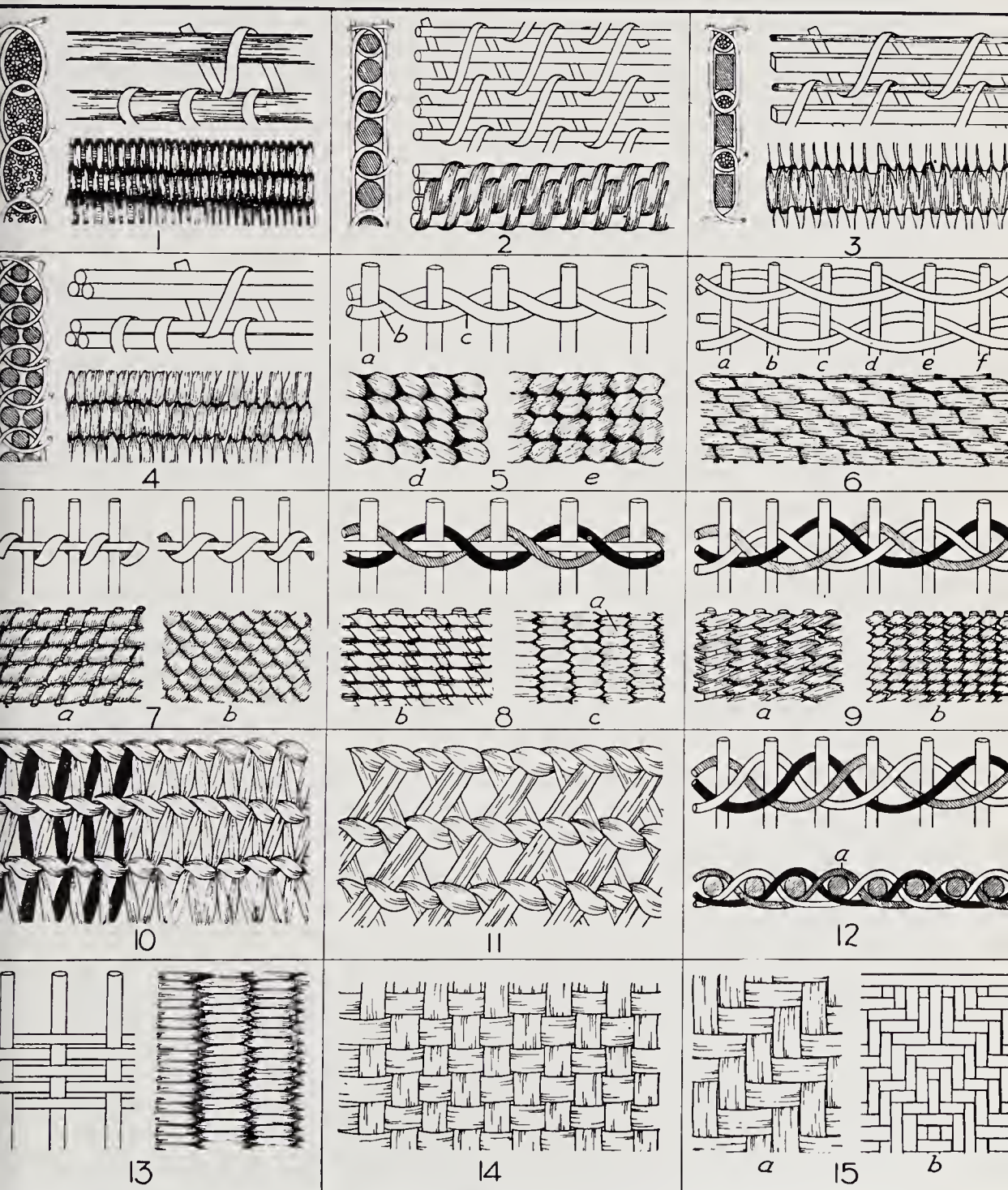
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The illustrations are taken from the following references. Lack of space compels this brief form of acknowledgment. Figure numbers are in italics. 1; 7, 2; 6, 3; 6, 5; 11, 6; 12, 7; 11, 8; 16, 9; 3, 10; 11, 11; 20, 12; 27, 13; 24, 14; 17, 15; 17, 17; 17, 18; 28, 19; 28, 20; 28, 21; 28, 25; 38, 26; 37, 27; 37, 28; 34, 29; 5.

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Adapted in part from Weltfish and Mason

BASKETRY CONSTRUCTION TECHNIQS

LEAFLET 67

DECEMBER, 1935

3rd Printing, February, 1955

1. **BASKET-MAKING** is the process of forming vessels or mats by intertwining relatively coarse vegetal fibres. It is closely allied to weaving, which differs from it chiefly in using very small flexible fibres, of animal origin with the exception of cotton, really a type of wool. Certain fabrics made of fine vegetal fibres lie on the border line between weaving and basket-making. Both of these basic crafts rest on the same mechanical process, the binding together of foundation elements, called warps, by filling elements called wefts or woofs.

2. **MAJOR TECHNIQS.** Baskets are made in four chief technics, coiling, twining, wicker and plaiting, each with subdivisions. The differences between them lie in the way warp and weft are combined. In coiling a vertical weft is wrapped around an horizontal warp; in twining and wicker the warps are vertical and the wefts horizontal; and in plaiting warps and wefts are indistinguishable, being of equal weight and performing the same functions. This leaflet attempts to explain how these technics work and to list the more common variations of each. Only fine basketry is considered. Space does not permit discussion of such points as direction of coiling or courses of weft, location of finished surface, details of stitching, rim finish, etc. For the distribution of these types and other details about basketry, see Leaflet 58. Page 263 of reference 3 lists many more technical variations. Twining and wicker are often combined in the term weaving.

3. **NOTES ON THE DRAWINGS.** 1, 2, 3, and 4 show cross sections of coils, an opened up section to show construction, and a section of finished work. 5 shows the construction and two types of finished work. 6 shows the construction and a finished section. 7 shows the construction as seen from interior and exterior, and finished sections of the two faces. 8 shows the construction and finished inner and outer faces. 9 shows the construction and finished inner and outer faces of 9 and 12. 10 shows a finished surface with one warp darkened to show the zigzag. 11 shows a finished surface. 12 shows the construction and a cross section of 9. 13 shows the construction and a finished section. 14 shows a finished section. 15 shows finished sections of two types.

COILING

4. **TECHNIC.** A basket made in this technic has a continuous coil which starts at the center of the bottom and rises to the rim. This coil has a core or foundation, the warp. The weft is a single strand which wraps around the foundation and at the same time sews its successive coils to each other. For details of making a coiled basket, see Leaflet 5.

5. **FOUNDATION TYPES** are three, each with several variations. They are multiple or bundle, rod or slat, and combinations of the first two.

6. **BUNDLE.** In this type (1) the foundation or warp is a mass of more or less round small grass stems, or of flat sections made by splitting large leaves, stems, twigs or roots. These flat sections are called splints or welts. Coils of this type tend to be oval and flexible, though if the bundle is large, as in 2nd Mesa Hopi, the coil is round. Examples of grass bundles are: 2nd mesa Hopi, Yokuts and Mission; of splint bundles, Pima and Thompson River.

7. **BUNDLE AND ROD.** In this type a single rod is set in the center of the bundle to give the foundation more stiffness. Panamint basketry is an example.

8. **RODS, VERTICAL.** Baskets with this coil (2) have walls made up of single rods set one above the other. The rods enclosed in each coil are from one to three. In other words, the stitches pass between every rod, or between every group of two or three. One rod is used much more than the other combinations. The coils of all but the one rod type are flat and broad. Each coil is slightly flexible vertically in the broader varieties. That is, the rods slip on each other if each is simultaneously pushed in opposite directions. Examples are: one rod, Pomo and Washo; two rod, Tinne (2); three rod, Mescalero Apache.

Quite broad single wooden slats are sometimes used. They appear in the coils on Mescalero Apache baskets and in the bottoms of those from the British Columbia Salish tribes.

9. RODS, BUNCHED. Here three or five rods are placed in a group instead of one above the other (4). This makes a round stiff coil and a very solid basket, possibly the most solid and long wearing of all. The three rod triangular type (4) is very widespread, while that with five rods is restricted to the Jicarilla Apache. Examples of three rod are: Western Apache, Maidu, Pomo and Chemehuevi.

10. COMBINATIONS of grass or splint bundles with rods or angular slats are quite common. Some of these combinations are: one or two rods and a bundle arranged vertically, used by the Yuki and in Plains gambling baskets respectively; slat with a splint or bundle, Lillooet (3); two rods and a bundle in a triangular arrangement, Navaho. In any large basket collection there will be found various other combinations carried out consistently in any given specimen and occasional irregular mixtures with several types of foundation in one basket.

TWINING

11. TECHNIC. Twined basketry resembles cloth in having vertical warps (5-a) bound together with horizontal wefts (5-b). In cloth, warp and weft are of equal size and equally flexible, but in twined baskets the warp is usually somewhat stiffer and larger than the wefts. Hence this style of basketry shows vertical corrugations (8-a), the presence of which is the chief indication of twined work. A less easily seen but essential characteristic of twining is the crossing of wefts between warps (5-c). The variations in this technic lie in the ways this crossing of wefts is accomplished. Twined stitches slant up to either right (5-e) or left (5-d). If the worker twists the wefts towards herself the slant is up to the left, and if away from herself, up to the right.

To make a twined basket a number of warps are laid out like spokes of a wheel and bound at the crossing. These ribs or spokes are fastened together by a pair of wefts which moves in a continuous spiral from the central hub to the ends of the ribs, the members crossing each other between warps.

12. PLAIN. The two wefts cross each other between warps in a half twist (5). Each weft is alternately on the inside and the outside of the basket. The weft which is above its partner between one pair of warps is underneath it between the next pair. Examples are Tlinkit, Pomo and the Hupa-Karok-Yurok group.

13. OPENWORK. The weft courses in twining are sometimes separated, so that the warps are visible. The warps are arranged in three ways; parallel, crossed (11) and zigzag (10). Where the warps are parallel, the wefts are in plain twine. In the other two types, each course of wefts moves forward one warp, producing twilled or diagonal twining.

14. TWILLED OR DIAGONAL. This type is difficult to describe so the drawing on the cover must be carefully noted (6). The warps are lettered a, b, c, d, e, f. The wefts clasp pairs of warps and move forward one warp on each circuit. So on the first course the wefts cross between e and f; on the second course between d and e; on the third course between c and d and so on. This constant moving over creates a groove moving diagonally upward across the line of weft courses. These diagonal grooves are very evident and make easy the identification of the technic. Examples are Pomo and Paiute.

15. WRAPPED. In this variation of twining (7) one weft is relatively stiff and the other very flexible. The stiff weft is laid along the inside of the warps at right angles to them. The flexible weft is wrapped around the crossings of warps and the stiff weft. These two elements are so closely set that the wrapping weft covers them both. This technic produces a basket which has on the outside diagonal rows of square stitches set cornerways (7-b) and horizontal rows of what looks like coiling on the inside (7-a). This basketry is quite flexible. Examples are Nootka, Makah and Chehalis.

16. LATTICE OR TEE. This is the most elaborate of the twined technics (8). It has stiff warps and three wefts, one stiff and two flexible. The stiff weft is laid outside the warps at right angles to them. The two flexible wefts are crossed with a half twist around the junc-

tions or the warps and the stiff weft. The completed basket resembles plain twining on the inside (8-c) and coiling on the outside (8-b). The stitches on the twined inner surface are horizontal. The stitches on the coiled surface show a characteristic wide spacing. The stiff weft is sometimes omitted on the last few courses, which thus show plain twining on both sides. The finished products of wrapped and lattice twining look superficially alike. But the lattice-work lacks the square outer stitches and the flexibility of the wrapped work; and the horizontal rows are outside on lattice-work and inside on wrapped work. Lattice twining is done only by the Pomo.

17. 3-STRAND TWINE AND 3-STRAND BRAID. These technics are used at the start of twined baskets and to make decorative bands. Whole baskets are rarely made in these technics. In both, 3 wefts are used. Each weft passes over 2 warps and under 1. In the twined type (12) each weft is always on one side of the other two. In the braided type (9) each weft is always between the other two. Both look like plain twine on the inside of the basket (9-b) and resemble a twisted cord on the outside (9-a). In both technics one weft is inside and two are outside (12-a). The technics cannot be told apart when in place. Examples are: 3-strand twine, Havasupai; 3-strand braid, Pomo.

18. WICKER. In this technic (13) there are stiff warps and one stiff weft. The basketry is made as in plain twining except that one weft is used at a time instead of two. This weft passes alternately over and under successive warps until a full course is completed. The next course rests upon the first one, but goes over those warps under which its predecessor passed, and vice versa. There is a superficial resemblance to twined work, but wicker may be distinguished by the horizontal position of the stitches on both faces of the basket. The technic is rare in fine Indian basketry, though quite common in coarse work. Fine wicker work is limited to the 3rd mesa Hopi, some eastern Canadian tribes and the Cherokee.

19. PLAITING OR CHECKERWORK. In this technic flat strips are passed over and under each other, both being of equal size. There are no warps and wefts as such, that is, neither member can be definitely designated as either foundation or filler. Plain plaiting is made by passing the elements over one under one (14). When they pass in any other combination, such as over and under two, over one under two, or over one under three, diagonal or twilled plaiting is the result (15-a). Quite elaborate designs can be made by changing the combinations as the work progresses. (15-b). The technic is chiefly used in mat making, though some baskets are made by it. Examples of mat making are from the Haida and some Great Lakes tribes, and of basketry from the Nootka. New England plaited baskets border on wicker because splints vary in size and approach the character of warps and wefts.

Compiled from the following sources by F. H. Douglas:

UNITED STATES NATIONAL MUSEUM

1. Aboriginal American Basketry—Otis T. Mason. Annual Report for 1902.

AMERICAN ANTHROPOLOGIST MAGAZINE

2. Prehistoric North American Basketry Techniques and Modern Distribution—Gene Weltfish. Vol. 32, No. 3, 1930.

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3. Basketry of the Pima and Papago—M. L. Kissell. Vol. 17, pt. 4, Anthropological Papers. 1916.

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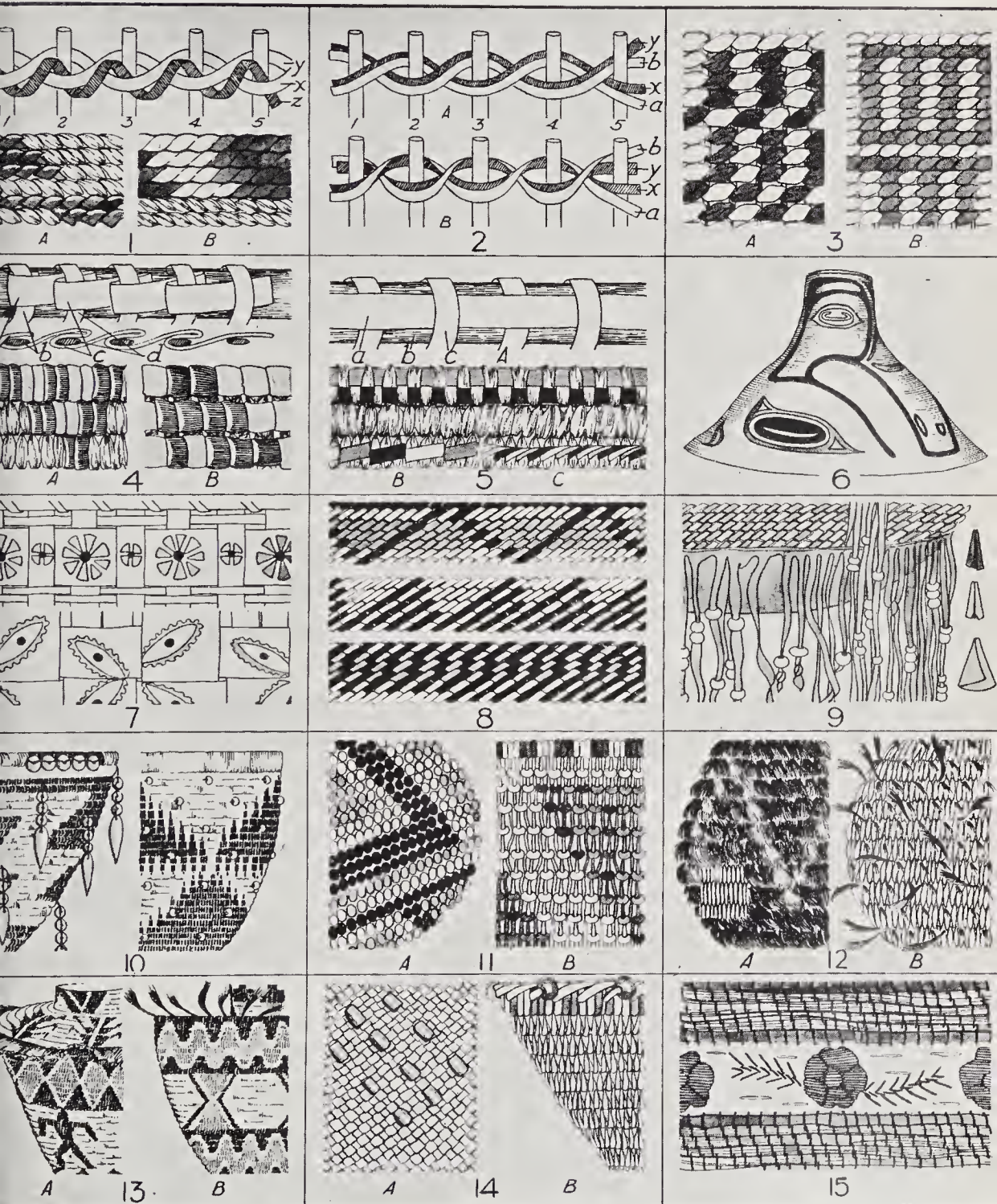
4. Anasazi Basketry—E. H. Morris and R. F. Burgh. Publication 533, 1953.
5. The Origins of Art—Gene Weltfish. Bobbs-Merrill, 1953.
6. Study of basket collections at the Denver Art Museum, the Laboratory of Anthropology and the University of California.

DENVER ART MUSEUM

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DEPARTMENT OF INDIAN ART

NORMAN FEDER,¹ *Curator*



Acknowledgments on last page

BASKETRY DECORATION TECHNIQUES

LEAFLET 68

DECEMBER, 1935

Revised, July 1968

1. INTRODUCTORY. Indian basketry is almost always decorated either with designs woven into the fabric, with materials applied to the surface, or with combinations of the two. This leaflet describes the technics used in these decorative processes. For details of the distribution and types of basketry see Leaflet 58, and Leaflet 67 for details of construction technics.

WOVEN TECHNICS

2. FALSE EMBROIDERY. (1) This is a technic applied to plain twined basketry. In this structural method a pair of wefts, running horizontally, are crossed between and bind together vertical warps. The false embroidery is applied with a single strand of flexible material (z), usually a grass stem. This is wrapped tightly around the wefts (x and y) on the outside of the basket. Owing to the crossing of the wefts, the embroidery strand wraps around weft x outside warps 1, 3, 5, etc. and around weft y outside warps 2, 4, 6, etc. False embroidery material differs from that used in constructing the basket and stands out clearly. Its stitch shape also makes it very evident, for it is somewhat rhomboidal, while that of plain twining is more elliptical. It may also be distinguished by the slant of its stitches to the right. This slant is evident as the kinds of plain twining on which it is used have stitches which slant up to the left. The individual stitches of grass false embroidery, as on Tlinkit baskets, can be clearly seen (1-A). On that made with corn husk, as on Nez Perce bags, the stitches run together (1-B). The design does not show on the inside of the basket. This is also true of half twist overlay twining—see section 3—but in that technic all stitches are elliptical on both decorated and undecorated areas and slant in the same direction.

False embroidery is most used by the Tlinkit of southeastern Alaska and spreads south into Washington. The Tlinkit use grass dyed with several colors as well as that naturally colored yellow-white. Colored wool threads are also used in this manner on Nez Perce type wallets and both silk and wool on Aleut grass baskets.

3. OVERLAY TWINING, HALF TWIST. (2-A) This technic is applied to plain twined basketry, for a description of which see Section 2 of this leaflet and Section 11, Leaflet 67. Overlay twining is applied by laying an extra weft (a and b), of a material different to that used for construction, against and parallel with each of the two structural wefts (x and y). When the wefts—one structural and one decorative in pairs—are crossed between warps only a half twist is given, so that the decorative weft is always on the outside face of each structural weft. Through the agency of this half twist one decorative weft which is on the outer surface of the basket at warp 1 moves to a position against the inner surface of warp 2, and then to the outer surface of the basket at warp 3. At the same time the other decorative weft is outside at 2 and 4, inside at 3. Thus the decorative wefts appear only on the outside of the basket, the inside showing only the structural wefts without a design. The superficial resemblance of this style to false embroidery is discussed toward the end of Section 2 of this leaflet.

This technic is most used by the tribes in the northwest corner of California and adjoining section of Oregon. Karok, Yurok, Hupa and Tolowa are examples (3-B). It is also used by the tribes about Puget Sound, such as the Skokomish (3-A). Shiny, yellowish-white bear grass, *Xerophyllum tenax*, is the most common material, with black maiden hair fern and woodwardia fern dyed red in second place. Some yellow dyed porcupine quills are used.

4. OVERLAY TWINE, FULL TWIST. (2-B) In this technic the structural wefts are covered with decorative wefts as described in Section 3. The difference between it and that described in Section 3 lies in the fact that when these pairs of wefts are crossed between warps they are given a full twist. This throws the decorative wefts (a and b) lying against the structural wefts (x and y) on both the inner and outer surfaces of the basket, the design showing on both sides. The common materials are those listed in Section 3. This method of decoration is used only in the northeast corner of California by such groups as the Pit River tribes, the Shasta and the northern Maidu.

5. BEADING (5) is a decorative technic applied to coiled basketry. A strip of material (a) different from that used in constructing the basket is sewed on the outer surface of a coil (b) with the structural stitching (c). Before a stitch is pulled tight the end of this extra strip is slipped under it. The stitch is then pulled tight, binding the end of the strip in place. It is slipped under other stitches along the coil, usually, but not always, every other one, until entirely in place. The technic produces a row of colored squares or rectangles on the outside of the coil (A). By varying the lengths of beading on adjoining coils quite elaborate geometric designs can be executed. Beading may also be applied diagonally in two styles (B and C). It should be noted that "beading" in this sense has nothing to do with decoration with china or other beads.

Beading is most used by the Salish tribes in south central British Columbia, such as the Thompson River and Lillooet, and by tribes of a similar culture in Washington, such as the Klickitat. The Alaska Eskimo also use this technic.

6. IMBRICATION (4) is closely related to beading—see Section 5 of this leaflet. The name comes from the Latin word *imbrex*, a tile, and is given to this decorative technic because of its resemblance to rows of tiles or shingles in place. It is a method confined to coiled basketry, though possible to execute on twining as is shown by a specimen in the Laboratory of Anthropology in Santa Fe.

The technic is an elaboration of beading (5), both being basically processes of sewing decorative elements on the outer surface of coiled basketry. In imbrication the end of a strip of material (a) differing from that used in constructing the basket is bent under. The bent section is slipped under a structural stitch (b), which is then pulled tight. The strip is then folded back on itself (c) for the width of the next structural stitch (d), which passes between the two members of the fold so that when it is pulled tight it is completely covered by the decorative strip. This folding back process is continued for the length of the decoration on the coil. Large areas containing many coils may be covered in this manner, which heightens the tiled roof effect. Long, rather narrow bands and small isolated areas may also be executed. The width of the imbricated stitches varies considerably. Two finished sections are shown (4-A and 4-B). The decorative materials may be of several colors. The designs do not appear on the inside of the basket.

Imbrication is restricted to the tribes of south central British Columbia, such as the Thompson River and Lillooet, and of the adjoining area in Washington, the Klickitat and Yakima being examples.

7. NATURALLY COLORED STRUCTURAL MATERIALS account for a good proportion of the designs on baskets. Of the baskets so decorated most have a light background on which appear designs in shades of red-brown, black or both. These colored materials are prepared as strips for sewing or as wefts for twining and serve in the construction just as much as do the light background materials. In the Southwest and in southwestern California and Nevada black is usually from the seed pods of the devil's claw or *martynia* and red from yucca root. Green and yellow yucca leaves are used by the Mescalero. In many parts of California the natural colors are black fern and red-red-bud bark. There are other colors which are listed in reference 2.

8. DYED MATERIALS have a rather limited part in decorative technic. In a few areas considerable groups of bright colors are used. The Hopi do more dyeing in wider range of colors than any other group. In recent years they have abandoned aniline dyes in favor of their own. These dyed materials are used structurally and not for decoration only. The Tlinkit, Makah and Nootka of the Northwest coast region are also users of much dyed material, which is decorative among the Tlinkit and structural among the other two. Among these peoples aniline dyes are now largely used. Other groups which use dyeing to some extent are the Jicarilla, the Mission and neighboring groups, some northern California tribes who make a red alder dye, and various tribes in the Southeast, especially the Chitimacha and Choctaw. Except for the northern California tribes all of these groups last mentioned use dye on structural materials.

9. PAINTING of decorations is a technic used but little. The Northwest coast tribes paint their characteristic totemic designs on basket hats (6), which are the most elaborately painted of all Indian baskets. The Apache paint a few simple designs (8) on their twined burden baskets. The Pima use a little red paint on a very occasional basket and the Maricopa sometimes smeared their work with pink. This tribe also paints designs on the basketry hoods of cradles. In the Northeast some Algonkin tribes of New England and the Iroquoian Oneida painted or stamped conventionalized flowers on their splint basketry (7).

10. DECORATIVE TRIMMINGS. By this expression is meant leather fringes, beads of various kinds, feathers and other materials sewed or otherwise fastened to basketry as decorations. This form of ornamentation is not common. The Apache trim their twined burden baskets (9) with skin fringes, often strung with large beads, and with conical tin jinglers. The Pomo use more decorative trimmings than any other tribe. Beads (10), both commercial and native, are sewn on the surfaces and rims of baskets or hang from them in pendants; and brilliant feathers are woven into coiled basketry so as to dot (12-B) or entirely cover the surface (12-A). Several California and Nevada groups entirely cover the surface of coiled baskets with beads. The beads are either sewn in place (11-B) or worked into tight netting which fits the surface closely (11-A). The Nootka sometimes weave a few large beads into their plaited baskets (14-A). The Yokuts and neighboring tribes work red yarn fringes (13-A) or black quail feathers (13-B) into the shoulders of their bottleneck baskets. The Pima occasionally have a few large beads, usually blue, fastened

around the rims of basket bowls (14-B). The delicate basketry of the Aleutian tribes is trimmed with patterns worked with colored silk or wool threads. Commercial yarns are also used for the false embroidery on Nez Perce type wallets. Finally, the Algonkin tribes of the Great Lakes region often insert sections of porcupine quill trimmed birchbark in their sweet grass coiled baskets (15).

Compiled by F. H. Douglas from the following sources:

1. Examination of the basket collections of the Denver Art Museum, the Laboratory of Anthropology and the University of California.

UNITED STATES NATIONAL MUSEUM

2. Aboriginal American Basketry—O. T. Mason. Annual Report for 1902.

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13. Beads and Beadwork of the American Indians—W. C. Orchard. Contributions, Vol. 11. 1929.

All references have many illustrations. The plate figures are adapted in part from references 2, 3, 9 and 13.

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DEPARTMENT OF INDIAN ART

NORMAN FEDER

Curator



POTTERY of the SOUTHWESTERN TRIBES

LEAFLET 69-70

DECEMBER, 1935

1. INTRODUCTORY. Pottery making in the Southwest has been widespread throughout the area and still is an important craft among some tribes. Four major branches may be distinguished: Basketmaker—Pueblo; Hohokam; Athabaskan; and Shoshonean. This last group does not include the Hopi because they are Puebloan in culture despite their Shoshonean language. The Basketmaker—Pueblo branch includes the prehistoric Basketmaker race and both prehistoric and modern Pueblo tribes. The tree ring dating system shows that this branch began to make pottery about 300 A. D. The Hohokam branch includes the prehistoric non-Pueblo peoples of southern Arizona called today the Hohokam, and the following modern tribes; Pima, Papago, Maricópa, Yuma, Mohave, Cocopa, Walapai, Havasupai and Yavapai. The beginning date for the pottery of this branch is as yet undetermined, though it was being made early in the Christian era. The Athabaskan branch includes the Navaho and Apache, and the Shoshonean, the Ute and Paiute. Information as to the age of their pottery processes cannot be given definitely. The subject is considered in reference 4. The Athabascans have been in the Southwest for six or seven hundred years and either brought pottery making with them or learned it soon after arrival. Nothing very definite can be said about the Shoshoneans.

2. TECHNICS. Southwestern pottery can also be placed in two grand divisions on the basis of technic. In one, coiling is used—See Leaflet 6—and in the other coiling plus paddle-and-anvil is the method. The difference lies in the method of shaping and smoothing the vessel walls. When coiling alone is used the work is done with fingers and gourd scraping tools. By the paddle-and-anvil method the walls are roughly built up with superimposed coils or rings and given a final form by striking the outside with a wooden paddle against a rounded stone or clay implement, the anvil, held inside the wall. Coiling is the method of the Basketmaker-Pueblo, Athabaskan and Shoshonean branches, and paddle-and-anvil that of the Hohokam branch with the exception of the Yavapai, who use the coiling method.

3. SLIP. This word refers to a thin mixture of colored clay and water applied to pottery to create a monochrome background and a smooth surface capable of being polished by friction, or suitable for receiving a painted decoration.

4. HOHOKAM. It is not absolutely certain that the modern tribes listed here under this heading are descendants of the ancient race of southwestern Arizona, though the available evidence indicated a possibility that this is true for some of these tribes. The term is used here as a convenient means of grouping those modern tribes whose wares are united by similarities of design and technic.

5. PREHISTORIC POTTERY cannot be discussed in this leaflet because of limited space. Between 300 and 1800 A. D. the Pueblo group produced something like 500 varieties of pottery and from an undetermined date up till about 1800, the Hohokam created another large series of varieties. Both

branches reached their greatest heights of excellence in the 13th to 15th centuries, A. D. The prehistoric period ended among the Pueblos in 1540, but so little is known about the pottery made between then and about 1800 that in this leaflet the modern period about which anything is known begins at that date. The same holds true for the Hohokam.

PUEBLO—BASKETMAKER BRANCH

6. HISTORICAL NOTE. Up till 1700, when the Spanish conquest was finally completed, the field of Pueblo pottery making had been divided up into a number of large areas within which the various towns made wares which had a general regional similiarity. But after the reconquest of 1700 each of the surviving towns began to make its own types of pottery, a practice which persists today. For details about the varieties made today see Leaflet 53-54, and for details of Pueblo pottery making see Leaflet 6, preferably the second edition. For a list of modern Pueblo towns see Leaflet 45-46.

7. MODERN POTTERY. About 40 types of decorated pottery are made or have been made until recently in the existing Pueblo villages. These have been described in more detail in Leaflet 53-54. Undecorated cooking or utility wares are made in a number of towns. The groupings of these types in their relationship to prehistoric types will be discussed in a future leaflet. Thanks largely to the demands of commerce, pottery making is an active art in most pueblos, and in a number of towns vessels are still made for use in the native homes. A brief summary of the chief modern wares follows:

Starting in the western part of the Pueblo area we find the Hopi of northern Arizona making a ware (1) characterized by the presence of an unslipped background mottled in the cream-to-orange range of color. Red and white slipped wares are also made. All are decorated with black and red designs largely made up of highly conventionalized birds or parts of birds, with geometric elements much used as small details. The designs show a wide range in variety and invention. South of Gallup, New Mexico, lies Zuñi. Here the more usual decorated pottery (2) has a white slip bearing black designs sometimes combined with red. A small group of elemental designs is used in a limited number of combinations. Life forms, both conventionalized and semi-realistic, are usually present, although the basic treatment is geometric. At Acoma (a and b), Laguna, and Isleta (c), lying between Gallup and Albuquerque, New Mexico, are made closely related wares (3). These have white slipped backgrounds on which are painted, in combinations of black, red, brown, yellow and orange, elaborate organizations of small geometric elements. At Acoma two rather realistic bird forms, representing the parrot (b) and the road-runner, are often used.

In the Jemez river valley northwest of Albuquerque lies another group of three villages which produce related wares (4). These are Tsia (a), Santa Ana (b) and Jemez (c). Of these, Tsia is the most productive of pottery, the art having been almost entirely abandoned at Santa Ana and existing at Jemez

only through the efforts of a few Tsia women who live there. The pottery of this group displays, on new pieces, a white or tan slip. At Tsia black, red, orange and yellow paints are used. In the other towns black and red, alone or in combination, appear. Tsia design, beside a basic geometric system, has rather massive combinations of conventionalized and realistic life forms. Long legged and long necked birds and realistic flowers are notable. At Santa Ana broad red bands in rather geometric organizations were the rule.

Along the Rio Grande valley in New Mexico are three towns whose pottery has much in common (5); Santo Domingo (a) and Cochiti (b), between Albuquerque and Santa Fe; and Tesuque (c), somewhat north of Santa Fe. In these towns a cream slipped ware with rich black designs is made. Details of design differ widely. Santo Domingo has bands of severe geometric figures, Cochiti shows rather scattered organizations of elements largely taken from heavenly phenomena and plant forms, and Tesuque favors simple, curvilinear elements and narrow bands executed with a notably thick line and often surrounded with outlines of dots and worm-like lines.

Related in design to the wares of these towns are the many kinds of pottery made at San Ildefonso, north of Santa Fe (6). Besides a black-on-cream pottery with designs having a general family resemblance to the wares just discussed, this town makes a cream ware with black and red designs (a), a black-on-red ware (b), plain polished red and plain polished black, a few pieces of pink and white on red and white-on-red, and much dull black on polished black (c). This last is the pottery which has brought fame to Marie Martinez and several other women. The available space does not permit even brief notes on these many wares.

Near San Ildefonso are Santa Clara and San Juan (7). The standard wares of these towns are plain polished red and plain polished black, Santa Clara favoring the latter, and San Juan, the former of these types. At Santa Clara the slip covers the whole vessel (a), while at San Juan it comes only to a little below the middle (b). A little very simple relief modeling is the only decoration on these wares. San Juan has recently been making unslipped, unpainted pots decorated by incising or carving, in the manner of prehistoric pieces from the nearby ruin of Pioge.

At Taos and Picuris, some 75 miles north of Santa Fe, pottery is made of a mica bearing clay which burns to a mottled color (8). The ware is not decorated except by the placing of molded fillets or scallops of clay around the necks of pots. This form of decoration is possibly due to influence derived from an Jicarilla Apache source.

HOHOKAM BRANCH

8. PIMA AND PAPAGO. (9) Pottery making was not a highly developed art among these tribes of southern Arizona. It appears that a little known tribe of the Piman stock, the Kwahadk, which has long been closely affiliated with the Pima and Papago, has produced the best pottery in the group and

strongly influenced the other two tribes. Large, rather tall globular jars with flaring rims were made for water storage (a). Pots of similar shape but shorter were used in cooking. Other forms were canteens, shallow trays for parching grain, and bean pots (b) having the rim horizontally expanded in two places into lug handles. The water jars were either buff with an unslipped, rather rough surface and with red designs principally made up of groups of curving lines, or plain red, somewhat polished. Forms to be brought in contact with fire were undecorated.

In more recent times smaller vessels in many shapes have been made. They have a red (c) or, less often, a cream background, polished to some extent and bearing simple designs in a brownish black. They have a general likeness to modern Maricopa ware, but are less highly finished. Informants say that the designs are adapted from those found on prehistoric Hohokam pottery and have no significance.

9. MARICOPA. (10) Pottery making is and long has been very common in this and two associated tribes, the Halchidoma and Kohuana. While large quantities of pottery are made for sale and home use, the ware is not considered to be of very good quality. The older forms were wide mouthed, more or less globular pots and jars (a), shallow trays (b), cups and ladles. Spoons have been made in modern times. Cooking vessels were not decorated. Water jars and ladles were plain red. Bowls and small forms were red or white with simple black designs. In former times decorations were not common.

In recent times much pottery has been made for the tourist trade in a wide variety of shapes, mostly rather small (c and d). This ware has a somewhat dark red slip, highly polished, bearing black designs. Cream slip is also used and often both red and cream are used in one piece (d). The designs, usually groups of curving lines with small areas of solid color, are derived from Hohokam pot sherds. This modern Maricopa ware and related types from the Pima and Papago can be distinguished from Pueblo pottery by their combination of a highly polished red or cream slip with black designs. No Pueblo black-on-red or black-on-cream wares have this high polish.

10. MOHAVE (11), YUMA AND COCOPA (12). Pottery making among these tribes is nearly extinct today. The ware has a reddish buff unslipped background bearing designs in red paint. The shapes are wide mouthed jars and pots in several sizes (12a, Cocopa), quite deep bowls (11a; 12c, Yuma), shallow trays (11b; 12b, Yuma) and ladles (11d). Vases with curious, high-nosed human faces crowning the necks are a local specialty (11c). The heads have earrings and necklaces of china beads. Many of the designs are all over repeat patterns such as deep zigzags with the angles filled in solid, hexagons in outline, groups of concentric oblongs, solid triangles and squares, solid squares with a T-shaped outline, and solid swastikas. Lines paralleling the main figures and dots between the designs are very common. Sometimes these elements are placed in isolated positions with blank spaces between them. The outsides of bowls are commonly decorated with vertical

parallel lines. Among the Mohave the designs are named for objects in nature such as spider, rain, coyote tooth and fish backbone. Both the shaping and painting of the pottery are inferior in quality when compared with the best Pueblo work. The Mohave used much more decoration than the Yuma or Cocopa.

11. HAVASUPAI, WALAPAI AND YAVAPAI. (13) None of these tribes ever attained much skill in pottery making and the art is extinct today, though a few old people remember the process. The pottery was relatively crude and of a natural earth color not covered with slip. The Havasupai used no decoration and the Walapai painted a few simple red designs suggestive of Mohave work but inferior to it. The Havasupai made only a globular cooking pot (a). The Walapai made jars and pots, bowls, spoons and pipes. Both Walapai and Yavapai mixed cactus juice with the clay.

The accounts of Yavapai pottery differ. The older describes the ware of the northeastern and western bands. This ware was made of red clay and was thin and brittle. The shapes were large shallow bowls, cook pots (c), and globular water jars with small necks (b), all decorated with straight or zigzag lines darker or lighter than the background. Saliva was mixed with the clay and the hands were kept wet with saliva. The newer account, describing the southeastern band, says that there were no designs and that the clay was sometimes colored with red mineral pigment. The shapes were the same as above, but the use of saliva and cactus juice is not mentioned.

ATHABASCAN BRANCH

12. NAVAHO. (14) Pottery of today is made in very few shapes, all closely related. The most common form is a deep slender pot with a rather conical bottom, slightly constricted mid-section and somewhat flaring, long neck. The larger shapes, (a), 20 to 30 inches high, have the most sharply marked angles and were used for dye pots. The smaller forms (b) are often almost cylindrical and were cooking utensils. These pots may be turned into drums by stretching skin over the mouths. Small deep bowls (c), and pitchers (d) formed by adding a handle to a small cook pot are sometimes seen. The pottery is reddish-brown and shiny with a coat of pinyon gum when new, but use soon turns it a sooty black. The only decoration is given by one or two molded fillets around the neck. These fillets have more width than height and have coarse corrugations. The outer surface of most pieces is scored with a corn cob while still wet. Vessels of these types are still made by the Navaho, largely for ceremonial use.

Formerly a painted ware was made in several shapes, bowls, canteens and dippers. According to reference 17, this ware was decorated with designs in color after baking, a most unusual practice. The designs were bird, animal, plant and cloud forms. The few pieces of this painted ware which have survived have a tan slip with black designs.

13. APACHE. (15) Very little is known about Apache pottery, which has not been made for many years and is very rare. That of the western Apache

of Arizona is known from only a dozen or so pieces. These are shaped something like the pots of the Navaho but have a somewhat larger upper section (a). They are black and smooth inside and out. The ware is quite thin and is undecorated. The juice of a plant, *Sphaeralcea emoryi*, was mixed with the clay and rubbed over the surface before firing. The pottery of the New Mexico Apache, apparently largely Jicarilla, is made of a micaceous clay of a coppery color which soon blackens with use. The outer surface is often scored before drying. There appear to be two common forms, a rather tall globular pot with a wide mouth and a narrow flaring neck (b), and a pear shaped bottle with a small neck and mouth and a slightly flaring rim (c). The only decoration is in the form of fillets molded on the neck or shoulder. In contrast with similiar fillets on Navaho pottery, these are higher than wide or of equal dimensions, have a wavy crest rather than a corrugated one and often appear in isolated sections instead of a continuous band.

SHOSHONEAN BRANCH

14. UTE AND PAIUTE. These two tribes belong more to the Plateau area than to the Southwest, but are such close neighbors that they are mentioned here. Because of lack of investigation little can be said about their pottery except that rather crude cooking pots with conical bottoms were made. They were brownish-black and undecorated. See reference 22 for recent findings.

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Illustrations. 2, 3, 5, 6, 7, 8, 9, 10, 12, 13, 16, 17, 20, 22, 23 and 24.

Thanks are due to Dr. H. P. Mera of the Laboratory of Anthropology and to Dr. Malcolm Rogers of the San Diego Museum, for assistance in preparing this leaflet.

DENVER ART MUSEUM

1300 LOGAN STREET, DENVER, COLORADO

DEPARTMENT OF INDIAN ART

NORMAN FEDER

Curator

INDIAN VEGETABLE DYES

Part II

LEAFLET 71

JANUARY, 1936

4th Printing, June 1957

1. INTRODUCTORY. Before the introduction of various types of dyes by Europeans and Americans the Indians used a large number of plants as sources for dyes, stains and paints in a wide range of colors. The introduction of commercial dyes has resulted in the abandonment of many of these native dyes, though some have survived and others have been introduced in recent years. This is true of the Navaho, who, thanks to the revival of their weaving through the efforts of interested whites, are today using many more vegetable dyes than they did under aboriginal conditions. The Navaho dyes listed herein are largely in this group.

Information about these native vegetable dyes is widely scattered through the scientific literature on the Indian. To make this information more easily available lists of dyes are from time to time issued as leaflets in this series, the first list being Leaflet 63.

2. METHODS OF USE. The large majority of vegetal dyes were prepared by boiling the plant materials. Sometimes the objects to be dyed were boiled with the dye and sometimes they were soaked in the cold solution. Mordants, or substances used to set the dyes, were used in many cases. It is planned to list the various types of mordants in a future leaflet. Space does not permit discussion of all the methods of using vegetal dyes. These details may in most cases be found by consulting the works listed in the bibliography.

3. TRIBES. It should be understood that in many cases the dyes listed in this leaflet and in number 63 were used by many more tribes than those whose names are printed. In general all the tribes in any given area used the dyes listed as being from any single tribe in that area. Some plants, such as the wolf moss, *Evernia vulpina*, were used in several areas.

| SCIENTIFIC NAME | COMMON NAME | PART OF PLANT | OBJECT COLORED | TRIBE |
|--|--|--|--|--|
| Alismaceae <i>Dondia depressa</i> <i>Pinus edulis</i> <i>Tsuga Canadensis</i> | Water lily Western blite Pinyon Hemlock | BLACK Shells of seeds Pitch Bark | Basketry Basketry Wool Blanket wool | Klamath Cahuilla Navaho Tlingit |
| <i>Juglans major</i> <i>Myrica gale</i> | Wild black walnut Sweet gale | BROWN Leaves, hulls, whole nut Tips of branches | Wool | Navaho Ojibwe, Flambeau |
| <i>Juniperus</i> <i>Juniperus mono-sperma</i> <i>Tsuga heterophylla</i> | Cedar Juniper Hemlock | GREEN Leaves Bark, berries Bark | Face paint Wool Basketry | Yavapai Navaho Tlingit |
| <i>Impatiens biflora</i> <i>Oxalis stricta</i> <i>Rhus typhina</i> | Spotted Touch-me-not Sorrel Staghorn | ORANGE Entire plant Entire plant Inner bark, central pith | | Menomini, Ojibwe Meskwaki Pillager, Ojibwe |
| <i>Thelesperma sub-nudum</i> | Navaho tea | Leaves, stems, blossoms | Wool | Navaho |

| SCIENTIFIC NAME | COMMON NAME | PART OF PLANT | OBJECT COLORED | TRIBE |
|---------------------------|----------------------|-------------------------|---------------------------|-----------------------------|
| Opuntia polcanthua | Cactus | PINK Fruit | Wool | Navaho |
| Cerasus crenulata | Wild cherry | PURPLE Roots | Wool | Navaho |
| Rubus vitifolius | Wild blackberry | Berry juice | Wooden articles | Luisefio |
| Betula occidentalis | Birch | RED Bark | Buckskin | Hopi |
| Cercocarpus montanus | Mountain mahogany | Bark of root | Wool | Navaho |
| Echinocystis macrocarpa | Gourd | Seeds | Rock paintings | Luisefio |
| Krameria parvifolia | | Roots | Leather | Pima |
| Prunus americana | Wild plum | Roots | Wool | Navaho |
| Quercus velutina | Black oak | Bark | | Ojibwe |
| Ranunculus pennsylvanicus | Bristly crowfoot | Entire plant | | Ojibwe, Flambeau |
| Ranunculus recurvatus | Hooked crowfoot | Root | | Menomini |
| Rhus trilobata | Sumac | Leaves, twigs, berries | Wool | Navaho |
| Salix | Willow | Roots | Ornamental parts of dress | Potawatomi |
| Urtica lyalii | Nettle | Leaves, stem, roots | Basketry | Tlingit |
| Atriplex canescens | Shad scale | YELLOW Leaves, twigs | Wool | Navaho |
| Carthamus tinctorius | Saffron | | Corn bread | Hopi |
| Chrysothamnus latisquamus | Goldenrod or chamiso | Flowers, twigs | Wool | Navaho |
| Chrysothamnus bigelovii | Rabbit bush | Twigs, blossoms | Wool | Navaho |
| Helenium hoopesii | Owl's foot | Flowers, leaves | Wool | Navaho |
| Hymenoxys metcalfei | Owl's claw | Flowers, leaves | Wool | Navaho |
| Impatiens biflora | Spotted Touch-me not | Entire plant | | Ojibwe |
| Oxalis corniculata | Ladies sorrel | Entire plant | | Menomini |
| Parosela emoryi | Parosela | | Basket strands | Southern California Indians |
| Populus angustifolia | Cottonwood | Bud | Quills | Omaha |
| Psoralea macroschya | Pea scurf | Roots | Basketry | Luisefio, Salinan |
| Ranunculus pennsylvanicus | Bristly crowfoot | Entire plant | Mats, basketry | Potawatomi |
| Rumex crispus | Curled dock | Leaves, stems | Porcupine quills | Cheyenne |
| Rumex hymenosopalus | Canaigre | Roots | Wool | Navaho |
| Rumex venosus | Veined dock | Roots, dried | Feathers, quills | Cheyenne |
| Rudbeckia hirta | Black-eyed-Susan | Disk florets | Mats | Potawatomi |
| Scirpus | Great bulrush | Pollen | Face paint | Cocopa |
| Tagetes micrantha | Bitter ball | Entire plant | Wool | Navaho |
| Typha angustifolia | Cat-tail | Pollen | Paint for faces | Pima |
| Watsica glomerata | Mullein | Roots | Porcupine quills | Yurok, Karok |

Compiled from the following sources by Mona Hanks under the direction of F. H. Douglas:

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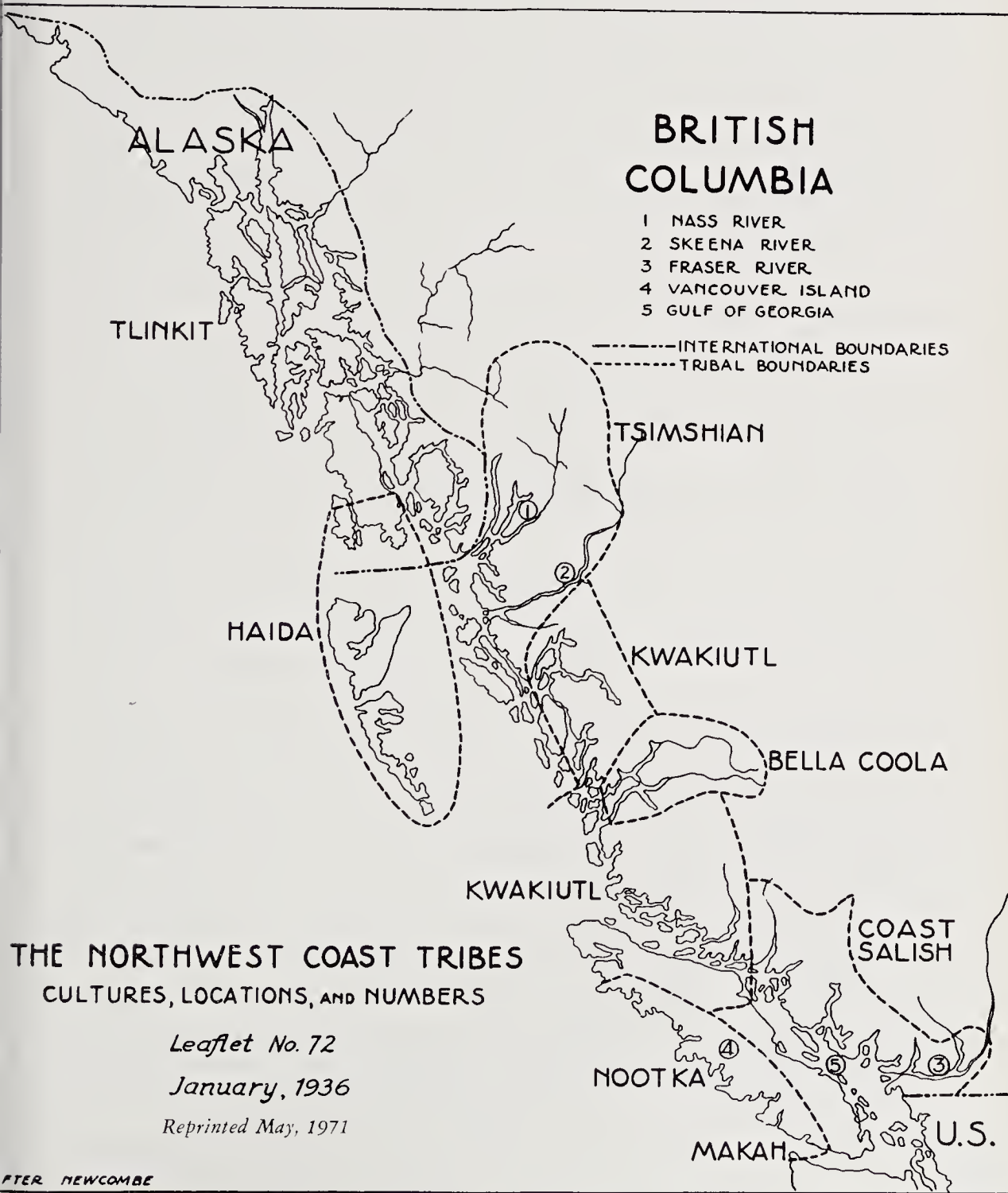
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DEPARTMENT OF INDIAN ART

NORMAN FEDER, *Curator*



1. THE NORTHWEST COAST INDIANS are the members of those tribes whose names and the extent of whose range are shown by the map on the cover.

2. CULTURE. The distinctive culture of these tribes is best summed up in the following quotations from "The American Indian"—Clark Wissler. "The great dependence upon sea food, some hunting on the mainland, large use of berries; dried fish, clams and berries are the staple food; cooking with hot stones in boxes and baskets; large rectangular gabled houses of upright cedar planks with carved posts and totem poles; travel chiefly by water in large, sea-going dug-out canoes, some of which had sails; no pottery nor stone vessels, except mortars; baskets in checker, those in twine reaching a high state of excellence among the Tlingit; coil basketry not made; mats of cedar bark and soft bags in abundance; the Chilkat, a Tlingit tribe, specialized in the weaving of a blanket of goat hair; there was no true loom, the warp hanging from a bar, and weaving with the fingers, downward; clothing rather scanty, chiefly of skin, a wide basket hat (the only one of its kind on the continent and apparently for rain protection); feet usually bare, but skin moccasins and leggings were occasionally made; for weapons the bow, club and a peculiar dagger, no lances; slat, rod and skin armor; wooden helmets, no shields; practically no chipped stone tools, but nephrite and green stone used; wood work highly developed, splitting and dressing of planks, peculiar bending for boxes, joining by securing with concealed stitches; high development of carving technic; work in copper may have been aboriginal, but, if so, very weakly developed; decorative art is conspicuous, tending to realism in carved totem poles, house posts, etc.; some geometric art on baskets, but woven blankets tend to be realistic; each family expresses its mythical origin in a carved or painted crest; the tribe of two exogamic divisions with maternal descent; society organized as chiefs, nobles, common people and slaves; a kind of barter system expressed in the potlatch ceremony in which the leading units of value are blankets and certain conventionalized copper plates; a complex ritualistic system by which individuals are initiated into the protection of their family guardian spirits, those so associated with the same spirit forming a kind of society; mythology characterized by the Raven legends."

The tribes in the southern part of the area, the Kwakiutl, Bella Coola and Nootka, display certain differences. "Use a hand stone hammer instead of a hafted one; practically no skin clothing, but twisted and loosely woven bark or wool; no coil or twined basketry, all checker work; have a tendency toward paternal descent for its exogamic groups; the crest system less in evidence, but the initiation groups very strong, particularly the cannibal cult, and far less associated with clans."

3. LOCATION. These tribes were in the locations shown on the map at the time of their exploration by Americans and Europeans in the late 18th and early 19th centuries. They have legends and traditions of migrations in not so very ancient times. Within their area the tribes traveled a great deal, but their homes were settled places to which they returned from the voyages. Certain groups have shifted their homes to some extent.

4. VILLAGES. Under aboriginal conditions these tribes lived in a number of permanent villages during the winter months and through the rest of the year lived in many small settlements in locations favorable for food gathering or the obtaining of raw materials for their industries. But with the coming of white influence there began a tendency, which has been steadily growing, to abandon their old villages and to move to the neighborhood of white towns. As a result of this, and because of the lack of up to date information, it is difficult to state in this leaflet just how many native villages are in active existence today. In the following table the number of existing villages of each tribe is given. But no guarantee can be given that this information is entirely accurate. Reference 5 discusses this point.

| | | | |
|------------------|------------------|-------------------|----------|
| Tlinkit..... | about 30 | Kwakiutl..... | about 20 |
| Haida..... | about 5 | Nootka..... | about 25 |
| Tsimshian..... | About 12 | Coast Salish..... | about 40 |
| Bella Coola..... | 2—one very small | | |

Besides these principal villages there is an undetermined number of small camp sites or tiny settlements. Even in the old days not all of the villages and settlements were occupied simultaneously and this condition still exists.

5. POPULATION CHANGES. From various estimates it appears that the tribes in question numbered about 50,000 to 60,000 toward the end of the 18th century. Epidemics of various kinds, especially smallpox, and to some extent, lack of food and intertribal wars rapidly reduced the population during the 19th century. Today the population seems to be somewhere in the neighborhood of 19,000. It appears that all these tribes but the Bella Coola have increased somewhat in the last 10 years.

6. TRIBE. This word is loosely used in this leaflet to denote groups speaking the same language or slightly different dialects of one tongue. Each of these is made up of small village units which, formerly at least, were largely independent of each other. The names of these subdivisions of stocks will be listed under each main heading.

7. LINGUISTIC STOCKS. According to the Powell classification the following distinct stocks were found on the Northwest coast; Koluschan, Skittagetan, Chimmesyan, Salishan and Wakashan. More recent studies indicate that these stocks are not all distinct and combine as follows with themselves or neighboring stocks: Salishan and Wakashan with Chimmakuan into a new group called Mosan; Koluschan and Skittagetan with Athabaskan into a group called Nadene; Chimmesyan with a large number of other stocks to the south into a stock called Penutian. The Mosan stock mentioned above is also combined with Algonkin and Kitunahan (Kootenay) in the Algonkin-Wakashan division proposed by Sapir (see reference 6). As not all of these combinations are generally accepted the old Powell terms will be used under the tribal headings to follow.

8. TLINKIT OR TLINGIT (Tling-kit). The name means "people". Koluschan linguistic stock. The population today is about 4,700, of whom 250 are in Canada and the rest in Alaska. The following subdivisions of the tribe are noted in various references; Auk, Chilkat, Henya, Huna, Hutsnuwu, Kake, Kiyu, Sanyakoan, Sitka, Stikine, Sumdum, Tagish, Taku, Tongas, Yakutat, Yagtag. The people formerly lived in some 50 villages scattered throughout their territory. For the modern villages see section 4.

9. HAIDA (High-dah). The name means "people". Skittagetan linguistic stock. Population today, about 1,350, 750 being on the Queen Charlotte Islands. That portion of the tribe which lives in Alaska, having moved there some 200 years ago, is called Kaigani. About 25 main villages were formerly occupied and a large number of small settlements. For the modern villages see section 4.

10. TSIMSHIAN OR TSIMSYAN (Tsim-she-an). The name means "people inside of the Skeena river". Chimmesyan linguistic stock. Recent censuses listed a population of about 4,440, of whom 850 are in Alaska. There are three main divisions of the tribe, the Tsimshian proper near the mouth of the Skeena river, the Gitksan or Kitksan inland on this river and the Niska or Nisrae of the Nass river valley. These groups formerly occupied about 3 dozen villages. For the modern villages see section 4.

11. BELLA COOLA (Bel-la Koo-la). The word is a corruption of the Kwakiutl name for this tribe. Its meaning is not known. The tribe has no name for itself as a whole. Salishan linguistic stock and its most northern branch. The tribe moved north from other branches of the stock and became isolated from them by tribes of other linguistic stocks. The population today is about 250. Formerly the tribe lived in several dozen villages on the Dean and Bella Coola rivers. Today there are but two, though nearly the whole tribe is in one of these.

12. KWAKIUTL (Kwah-kee-ootl). The word means "beach on the other side or north side of the river". Wakashan linguistic stock. A Canadian census listed about 2,150 members of the tribe in 1934. They are divided into three main divisions, each with several subdivisions, on the basis of language. The Haisla held about one quarter of the mainland area occupied by the nation, the Heiltsuk the center portion of the mainland area, and the Kwakiutl the southern part of the mainland area and the northeastern quarter of Vancouver Island. Formerly there were a large number of villages. For the modern villages see section 4.

13. NOOTKA OR NUTKA (Noot-kah). The meaning of the word is not known. Wakashan linguistic stock. The 1934 population was about 1,600. They were formerly divided into about two dozen sub-tribes, of which 18 survive today. All live on Vancouver Island except the Makah, who are on Cape Flattery, the northwest corner of Washington, and numbered 370 in 1934. For the modern Nootka villages see section 4.

14. COAST SALISH (Say-ish). The word means "people". The large number of small bands may be divided into three main groups; the Comox, occupying the coasts of the mainland and of Vancouver Island around the north end of the Gulf of Georgia; the Cowichan of the southeast side of Vancouver Island and the Fraser river delta on the mainland; and the Squawmish north of the city of Vancouver, on the mainland of British Columbia. The present population is about 4,600. For the modern villages see section 4.

Compiled by F. H. Douglas from the following sources:

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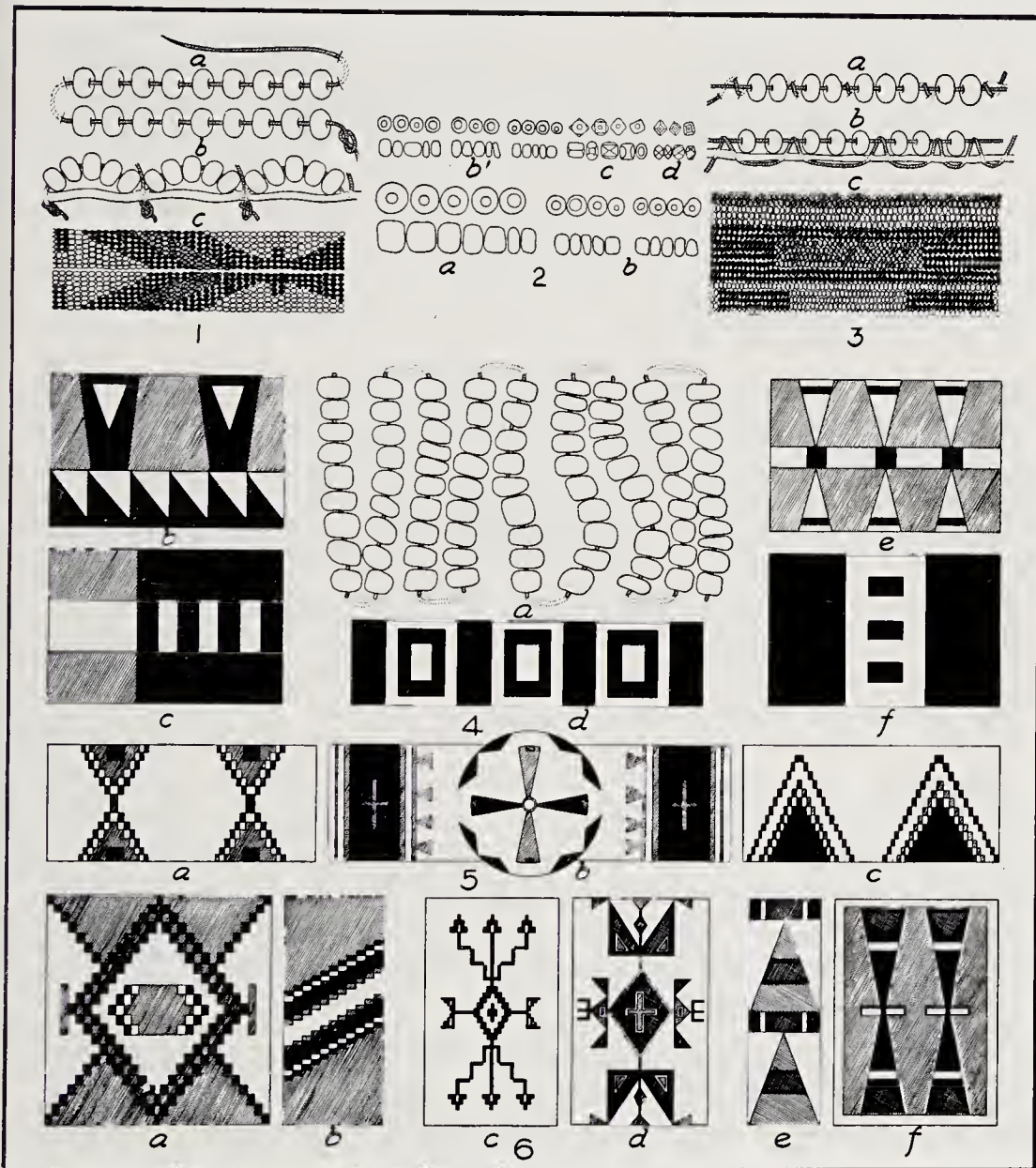
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DEPARTMENT OF INDIAN ART

NORMAN FEDER *Curator*



Drawn by Betsy Forbes.

PLAINS BEADS AND BEADWORK DESIGNS

LEAFLET 73-74

DECEMBER, 1936

1. BEADWORK reached its highest development on the central and northern Plains. Except around the Great Lakes and in the upper Mississippi Valley, where, in the last 60 years, the tribes have decorated their large shoulder bags with panels of beadwork, the covering of large areas with small glass or china beads has been restricted to the Plains area mentioned above. Here the section to be decorated was entirely covered with beads, one color forming the background for the designs. Elsewhere such beads were used for borders, small trimmings and the execution of rather delicate designs on backgrounds of skin or cloth.

In the light of present knowledge it appears that there have been two periods in the development of the designs used in such beadwork. The first began sometime, but not long, before 1800 and lasted up till about 1850. In this period all of the tribes in the area used designs which were very much alike. In the second period, from 1850 till the present, several schools of design have been developed, each marked by certain definite characteristics. This leaflet is an attempt to indicate the character and distribution of the design styles of the two periods.

2. BEADS of china, glass and metal were introduced among the Indian tribes by American and European traders, who had obtained them very largely from Venice. At a later period Bohemian or Czecho-Slovakian, French and English beads were also used, and more recently, Japanese and German. In the modern types of opaque white beads there is a slight difference in the color between the Venetian and the Bohemian, the latter being a trifle darker and inclining to a semi-translucent bluish tinge. Except for the Hidatsa, a tribe of North Dakota, beads of the type used for bead embroidery were not made by Indians. The Hidatsa learned how to melt glass and cast rather large beads, but their production was too slight to have any effect on the trade.

3. TECHNIC. Beadwork in the area under consideration is made by sewing beads to the surface of cloth or dressed animal skin. Sinew made from the tendons of large animals is the common thread, though commercial cotton thread has also been used. Usually sinew is used on skin and thread on cloth. The sinew is not applied with a needle, but is pushed through holes made with awls of bone or steel, the latter having been used for many years. Two methods of stitching are used.

The first of these, usually called the lazy stitch (1), is the common method of the central Plains. By this method beads are strung on threads which are fastened to the surface at the ends of short parallel rows (1a), the strings of beads tending to bump up between the stitches. A ridged effect is the result of this technic (1b). The beadwork done with the lazy stitch (1c) closely resembles in appearance certain quillwork technics, both showing rather narrow bands, set close together, made up of short parallel rows running at right angles to the line of the band. This resemblance seems to indicate that this bead sewing technic was strongly influenced by that of the older quill-

work. The second method is called the overlay or spot stitch (3). In this case strings of beads are tightly attached to the surface, in close set rows, with other threads, thus producing a smooth finish. (3a, from above; 3b, from the side; 3c, finished work.) This method is preferred by the northern tribes.

The nature of the lazy stitch restricts it to the execution of angular designs, though sometimes curves of a sort are made. Curves are easily made when the spot stitch is used.

If skin is the background the stitches do not pass through but only under the surface, so that nothing is visible on the under side (1b). If cloth is used the thread passes through and shows on the back (3b).

For additional information about these technics and other phases of beadwork see Leaflet 2.

EARLY PERIOD

4. HISTORY. In order to discover something about early beadwork the writings of a large number of 18th and 19th century explorers, traders and soldiers were gone through. The results of the survey were very slight in the matter of detail, but a strong impression was gained that beadwork hardly existed until about 1835-40. Another source of information is the body of paintings and drawings produced by early artists, a source which confirms the impression made by the written records. A final means of tracing the history of the art is what remains today in the way of specimens collected in the early days. Very few such remain, but this scarceness is not to be taken as a true indication of the early rarity of beadwork, for few specimens of any kind have survived from this period.

5. BEAD TYPE. From this survey sufficient data have been gathered to make possible the drawing of at least the outline of a picture. The type of beads used is well established and gives an excellent clue toward the dating of specimens. Their chief characteristic is size. Full-size drawings of a number appear on the cover (2a). The beads are about one-eighth of an inch in diameter, almost twice as large as those used since the mid-19th century. They are made of opaque china. White and a medium sky blue are by far the most common colors, black being the next most common. A rather deep buff, light and dark red and a darker blue have also been noted. One specimen shows a translucent red with a white core. The beads are quite irregular in shape and size. The name "pony bead" is usually applied to this large early type. Indian clothing collected by Lewis and Clark in 1805 shows these beads and the Journal of the expedition mentions them often.

Besides this large bead a very small form reached the Plains toward the end of this period. Such beads do not appear on existing specimens, but their profusion around old forts and stores would indicate that some use was made of them, possibly on moccasins.

6. TECHNIQS. The beads are usually sewn in place by the lazy stitch method. But the distance between the stitches passing under the skin is greater than that used later, which gives the work a rather loose effect (4a). Some examples of the overlay stitch exist, but here again the work is more coarse than now. The existing specimens indicate that sinew alone was used for sewing.

7. DESIGNS. The designs worked out with these beads and technics are extremely simple and appear to have been common to all of the tribes in the area, if existing specimens and old pictures give a true picture. Equilateral and isosceles triangles, usually pendant from a bar or stripe (4e); sawtooth bands (4b); bars and oblongs (4c, 4f); and sets of concentric oblongs are the elements used (4d). The forms are large and heavy, showing nothing of the delicacy seen in modern work of the Siouan type (see section 14).

8. OBJECTS DECORATED. The large areas of beadwork made in the second period do not appear. Bands even six inches wide are uncommon, though they appear on women's dress yokes and on men's shirts. There survive at least two rather narrow pipe bags with perhaps 40 square inches of beading. In general narrow bands or stripes, often with pendant figures, were the rule. Dresses, shirts, pipe bags, the headbands of war bonnets, and moccasins are the articles surviving today with beaded decorations. Old pictures bear out this distribution, though there is no reason to think that other articles may not also have been beaded.

MODERN PERIOD

9. BEAD TYPE. About 1840-1850 a bead of smaller size, or of several smaller sizes, appeared on the Plains. These are usually called seed beads (2b, 2b'). This term is sometimes misunderstood as meaning that the beads were made of seeds, whereas they were really glass or china. These beads are one-sixteenth to three thirty-seconds of an inch in diameter and in the older specimens vary considerably in thickness. That is, the distance across the bead at right angles to the central opening is quite uniform in any given size, but the diameter parallel with the hole varies considerable. Often one edge is thicker than the other. In recent times this irregularity hardly exists, probably because of improved methods of manufacture. The presence or absence of this unevenness is a clue to the age of a specimen. The older beads of this type are opaque and have softer, richer colors than are seen today. Translucent beads do not seem to appear before 50 or 60 years ago. Besides the rounded beads there is a type which has a facet on two to four sides (2c). These angular beads are often smaller than the rounded forms. Metal or glass beads, colored silver or gilt, and faceted throughout were introduced after 1885 (2d). In very recent times transparent tubular beads, with a greater length than diameter, have had a limited use on the Plains.

10. HISTORY. The examination of old photos and of dated specimens in museums shows that beadwork in the modern period attained its fullest development in the period 1880-1900. The art is still widely practiced, though its quality is not, on the whole, as high as formerly.

11. TECHNICS. Both of the methods of sewing described in section 3 are used, but appear more perfectly executed in the modern period. The smaller beads have made closer and tighter work possible. The lazy stitch is used exclusively by the Sioux, Cheyenne and Arapaho, and partly by the Crow and Shoshoni, Gros Ventre, Ute, and Assiniboin. The overlay stitch is used entirely by the Blackfoot, Sarsi, Plains Cree and Flathead and in part by the Crow, Shoshone, Assiniboin and Gros Ventre. Smaller tribes near these groups were influenced by them in choice of technic. Occasional specimens may, of course, prove exceptions to these statements. An example is the use by the overlay stitch group of the lazy stitch in narrow border bands. Tribes on the southern Plains who only use beading for trimming, such as the Pawnee, used the lazy stitch. Tribes on Oklahoma and nearby who do similar work, such as the Omaha, prefer the spot stitch.

The bead weaving technics so common in the Great Lakes and Mississippi Valley regions have only been used on the Plains in very recent times. Government and other schools seem to be responsible for their introduction.

12. OBJECTS DECORATED. Practically everything which the tribes made of cloth or skin shows beadwork. Every kind of garment for both sexes, bags of all sizes and shapes, cradles, horse furniture, toys and tipi furnishings, and ceremonial paraphernalia are the principal classes of objects which are beaded. The contrast between this profusion and the relative scarcity of beadwork in the early period point to the great increase of the craft in the modern period.

13. DESIGN STYLES. Four main design styles have been in use in the modern period. One of these is common to all groups, while each of the other three is very largely restricted to a group of tribes. The widely spread style is very simple and appears almost exclusively on beadwork arranged in long narrow strips, such as the decorations on men's hip-length leggings and on skin robes or cloth blankets. It is also found on early modern pipe bags, cradles and saddle bags. Solid triangles (5c) or hour glasses (5a), often terraced, circles, crosses and oblongs (5b), are almost the only design units used. They vary in size with the object decorated. Photographs taken in the 1870's show such designs as being the most common among all Plains tribes, and up to today they are still used, though the more individual design types have tended to crowd out this simple old style.

Floral designs have been used by some Plains tribes for many years. But they are importations from the eastern tribes and so are not discussed in this leaflet.

The three styles discussed in the next sections are named in this leaflet for the tribes which use them the most. But it should be understood that

they are not the exclusive property of the tribes for which they are named. In each style there are small tribal variations, but space does not permit their description in this leaflet.

14. SIOUX STYLE. This style shows rather light, spread-out designs on a solid color background. Isosceles and right-angled triangles, alone or combined into hour-glasses, diamonds or two-pronged forks (6d), and the thin straight line are the most common design elements. Stripes or bars and small squares or oblongs are also used, but less frequently and in less important positions, except on single saddle bags, where they are common. The lines are chiefly combined into forks, crosses and terraced figures (6c). Many of the individual units in a whole design may be solid and massive, but the prevailing impression of the style is one of lightness and openness. White is by far the most common background color, with medium to light blue next and a scattering of other colors far behind. Reds and blues dominate as design colors, with greens and yellows less common. Any other colors are unusual. The lazy stitch alone is used. The chief tribes using this style are the western Sioux, the Arapaho, Cheyenne, Gros Ventre, Assiniboin, Ute, and to some extent, the Crow.

The origin of the style is not known. Some of its elements, such as the triangle and the sets of concentric oblongs, are derived from the earlier style of the pony bead period. The thin line, the terrace, fork and other delicate elements appear rather suddenly, just about the time fairly permanent settlements began on the Plains. These designs appear in almost identical forms on certain Oriental rugs, which suggests that beadwork design may have been influenced by rugs brought in by the better class of settler. A positive statement on the matter cannot be made, but the hint has interesting possibilities which it is hoped may be developed in a future leaflet. Much beadwork in this style is still made.

15. CROW STYLE. Among the Crow and Shoshoni a design style developed which shows large massive triangular forms often executed on a background of red cloth instead of beads of contrasting colors. The large triangular forms are usually either much flattened or very tall, and may have within them small triangles, squares, oblongs or bars. The large triangles are often joined to form hour-glasses and diamonds (6f); and on narrow bands they are usually set point against base in a vertical row (6e). A band of another color frequently covers the junction of the triangles, and a thin white line may bound the large elements. White is hardly used except in this way. Pale blue and pale lavender are the most common colors. Darker blues and various greens and yellows are also seen. Red beads are more rare, the color being supplied by the scarlet flannel so common in backgrounds. The overlay stitch is used. Bead work in this style is chiefly found on cradles, horse furniture, long narrow legging and robe strips, moccasins, and medium to small bags. It does not seem to be made on shirts or dresses or on large bags. Pieces showing this style are found among the Ute, but it is not certain that they are made by this tribe.

The examination of material in the great collections gives the impression that the style is not very old, seeming to have been at its height in the period 1880-1900. The designs so closely resemble those painted on the rawhide containers called *parfleches* that a strong impression is received that they are almost directly copied from that source. *Parfleche* designs are much older, having been much the same in the early 19th century as today. For additional information about *parfleches* see Leaflet 77-78. Little beadwork in this style is now made.

16. BLACKFOOT STYLE. In this style a single element is used, the square or oblong. Hundreds of these little elements are massed in large units such as terraced triangles, squares and diamonds (6a), crosses, long fairly wide slanting bands with terraced long sides (6b), and various combinations of such elements. The large figures are usually of one color with edges of varicolored squares. The rows of squares are made clear by the use of contrasting colors. The background is usually white, though other colors may appear. A wide range of colors is found in the designs. The overlay stitch alone is used. Beadwork of this style was placed on almost everything made of cloth or skin by the tribes using it. They are the Blackfoot, Sarsi, Plains Cree and Flathead, and to some extent the Assiniboin.

The history or age of the style are not known. It appears fully developed on a suit collected in the 1860's. The smallness of the elements makes it seem likely that the style is of the modern period, for the large beads of the early period were hardly suitable for executing such small figures. The style has the closest affinity of any on the Plains to that seen in porcupine quillwork. Designs of almost identical character are seen on both old and modern examples of quillwork. This checkerboard style reached its greatest heights of elaboration in the woven quillwork of the tribes adjoining the Blackfoot to the Northeast. Beadwork in this style is still made.

This use of small oblongs often, but not always, appears in the designs of the early and widespread style described in section 13 (5a, c). This strengthens the idea that the style is at least in part derived from the quillwork which preceded it.

Compiled from the following sources by F. H. Douglas:

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2. *The Northern Shoshone*—R. H. Lowie. *Anthropological Papers*, Vol. 2, No. 2, 1909.
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10. Examination of the literary and pictorial sources mentioned in section 4 and of the principal large museum collections of beadwork.

Thanks are due to Arthur Woodward of the Los Angeles Museum for suggestions regarding this leaflet.

Illustration acknowledgments: 1a and 3b, Museum of the American Indian, Heye Foundation.

APPENDIX

THE PROCESS OF MAKING GLASS BEADS AT VENICE

A lump of melted glass is gathered on the end of a glass-blowing tube. The blower blows this lump into a pear-shaped bubble. A rod of iron is attached to the top of the bubble. As soon as it is attached the man holding it walks or runs away from the man holding the blowing tube. This draws the glass into a long, very fine tube, sometimes over 100 feet long. The tube is drawn out until the glass cools.

When the tube is entirely cold it is cut up into pieces about a foot long. These are in turn cut into bits the size of beads. These bits have a perforation, because the opening within the original bubble is not destroyed by the drawing out process. The holes in the beads are not made by drilling.

If cylindrical beads are wanted nothing more is done to the bits of tube mentioned above. But if more or less spherical beads are wanted a further step is necessary. The bits of tube are put in an iron cylinder along with a mixture of sand and ashes or of clay and charcoal. The cylinder is then heated and rotated. The heat causes the bits of tubing to soften and the rotary movement of the cylinder rubs these softened bits against each other until the corners are worn off and a spherical form assumed. The mixtures with them prevent the softened beads from sticking together.

DENVER ART MUSEUM

1300 LOGAN STREET, DENVER, COLORADO

DEPARTMENT OF INDIAN ART

RICHARD G. CONN, CURATOR



Drawn by Betsy Forbes.

COPPER AND THE INDIAN

LEAFLET 75-76

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1. INTRODUCTORY. At the time of their discovery the American Indians were still living in the Stone Age in the sense that stone was the principal material used for tools and weapons and that they had no knowledge of the working of metal by smelting, alloying, or casting. But if the rather widespread use of copper is considered it must be said that at least the beginnings of a Metal Age were in existence. This leaflet attempts to indicate the distribution of this copper industry and the forms it assumed.

2. SOURCES OF COPPER. When the very first explorers reached the areas listed below they found the Indians in possession of copper in the forms of tools or ornaments which had been made from metal found in their own regions. The copper of New England and eastern Canada seems to have come principally from Nova Scotia. Sources in New Jersey supplied the natives of that and neighboring states. The metal which was found throughout the southeastern states came chiefly from many places in the southern part of the Blue Ridge Mountains. In the Great Lakes region and in the Mississippi Valley the great source was the deposit on Isle Royale in Lake Superior, with a number of other deposits in the general region. The natives around the Great Lakes obtained their copper directly from the mines. The tribes to the south gathered copper nuggets which had been carried down from the north by glacial action. Float copper is the term applied to such finds. Of all the sources in North America those around the Great Lakes were the most important. The scattered Indians and Eskimos of north central Canada obtained their metal from a number of deposits, of which the Coppermine River basin was the most productive. In the Southwest very small amounts of float copper were obtained in various localities, probably mostly in southern Arizona. Copper-working was very slightly developed in this region and definite information as to the sources of the metal is lacking. Southwestern copper-working is discussed further in Section 15. The tribes of the coastal portions of British Columbia and southern Alaska obtained their raw material from deposits located north of them in Alaska in the valleys of the White and Copper rivers in the general region of the Alaska-Yukon boundary.

3. FORM AND QUALITY. The metal was found in lumps or sheets in various rock formations, or wherever it may have been deposited by ice, water or other natural forces which tore it from its original locations and carried it away. In the latter form it is called float copper. The metal used by the Indians was not obtained from ore, but occurred in a pure, soft form which could be dug from the rock with very simple means. On Isle Royale in Lake Superior many shallow diggings and broken tools show the location and methods of Indian copper mining. The deposits range in size from small particles to large masses weighing several tons.

The copper thus found is very pure. Various chemical analyses have been made of prehistoric copper objects and of unworked lumps which show that the metal is between 99 and 100 per cent pure. This purity affords the best

way of distinguishing native copper from that imported from Europe, for the latter does not exceed 98 per cent purity and is usually lower. This difference seems slight, but metallurgists consider it a sure test as to whether Indian made articles are of native or imported metal.

4. METHODS OF WORKING. Copper was worked into the desired forms by pounding with a stone when cold or after heating. Modern tests described in reference 3 indicate that temperatures of from 900 to 1500 degrees Fahrenheit were obtained by heating. A very common working process was annealing. The metal was brought to a high degree of heat and allowed to cool slowly. This process removed brittleness from the metal and made it tough and flexible enough to be hammered into shape. Tests show that some pieces were worked only when hot and not during the cooling period. But the contrary seems to have been much more common.

Modern scientists, using only tools which were available to the ancient Indians, have reproduced by these methods of working many objects made by the Indians, thus proving the correctness of the opinions formed by laboratory analysis of specimens. There is no basis for the theory that the Indians had a process of hardening copper which has now been lost. Copper is hardened somewhat by hammering and this was of course done by the Indians. But the process was no art which has since been lost, only the inevitable result of the chief method of shaping the metal.

Massive objects such as spear points or axes were worked by heating and hammering, or by hammering cold. The most celebrated products of the ancient coppersmith are the very thin sheets of metal used in making ornaments. These were worked by hammering and annealing followed by grinding and polishing with sand and sandstone. The experiments of Cushing show that these plates were cut into sections by making a groove around the area to be cut out (1, 2) and grinding with sandstone through the ridge formed by this groove on the opposite side of the plate (3). To make open work patterns, sections were removed by grooving and grinding, and holes were cut by punching or drilling. After cutting through a groove the bent-up edges were flattened out by hammering (4).

5. METHOD OF DECORATING. Massive objects in the tool and weapon class were not decorated. Articles made from thin sheets were given their most elaborate patterns by pressing grooves into the surface (1), thus outlining the shapes and details of various living creatures and abstract forms. Patterns were also made by piercing at regular intervals. On the Northwest Coast painted decorations were applied (34).

6. HISTORICAL NOTES. The use of copper passed out of existence soon after the tribes in various parts of the country came in contact with the white man or his products. Copper made in Europe, and more commonly brass, superseded the native metal for a time for the making of ornaments. Copper tools quickly gave way to those of iron, while silver and brass be-

came the favored metals for ornaments. Native copper objects were made in the Great Lakes region as late as 1828, but in general the practice had died out by the middle of the 18th century. On the Northwest Coast copper-working lasted somewhat longer, though after 1800 the metal was largely imported. Until quite recent times the large shields called "coppers" were still used on this coast.

When the use of copper began is not known, but from the available indications it had not been used for very long before the discovery of America. It seems to have reached its fullest development among various mound building groups in the Middle West which flourished perhaps 500 to 700 years ago.

7. DISTRIBUTION OF TYPES. The uses to which copper was put depended on the position of any copper-using group in relation to the source of its metal. If there was an ample supply close by many purely utilitarian articles were manufactured, more than those made for ornament. But if copper was scarce and had to be imported from far away it became more precious and was only made into ornaments for wealthy or important persons.

The greatest source of copper was the Lake Superior region and therefore the largest number of copper tools and weapons came from that section. In the central and southern Mississippi Valley where float copper was fairly abundant the metal was used more for ornament than utility. But there was enough of it for many people to have at least ear plugs and beads besides some tools. But in the Southeast, where it was apparently not common, copper was chiefly used in the manufacture of the elaborately decorated plates described in Section 13. And the rarity of the plates indicates that they must have been reserved for important persons.

8. EXTENT OF THE INDUSTRY. That, in certain areas at least, the Indians were well advanced into a Copper Age is shown by the number of specimens which have been recovered by scientists and collectors. Many years ago it was found that some 30,000 examples of copperwork were known in one state, Wisconsin. If all the specimens known today were counted, a total of at least 100,000 would be reached. And when the number of unexcavated mounds and sites is considered it is evident that many more pieces are yet undiscovered. A comparison of this figure with that of the native population in prehistoric times, as calculated by several investigators, shows that in the copper-using regions a large portion of the people must have possessed copper objects. It is clear that the use of copper was not a rare occurrence, but an important factor in the lives of thousands of Indians.

9. INDIAN IDEAS ABOUT COPPER. From the names given to copper by the various tribes which have used it in historic times it appears that the natives had no idea of metal as a separate and distinct substance, but supposed it to be a soft kind of stone.

VARIETIES OF COPPER OBJECTS

10. TOOLS. In this group are found chisels (11), axes (12), adzes (7), gouges (9), spuds (10), knives (5), awls (13) and drills. These range in size from almost miniatures to massive objects weighing over 30 pounds, and over 2 feet in length. The general forms are shown on the cover. Tools were especially common in the central states.

11. WEAPONS. This class contains the heads for spears (6) and arrows (8), and blades which are almost large enough to be called swords. Some arrow points were made of sheet metal bent into cones which slipped over the wooden shafts. Others were shaped like those of stone.

12. IMPLEMENTS. Pikes (16), punches (14), needles (15), pins, fish hooks (20), rods, and harpoons (21, 22) make up this group.

13. ORNAMENTS. The skill of the old coppersmiths is perhaps best shown by this group, for the sheet copper was worked into complex forms which were executed with great finish. The group includes crown-like headdresses, ceremonial standards (26), ornamental plates in the form of feather plumes, crescents (17, 23) and simple geometric forms, hourglass-shaped ear plugs (24), beads (19) and bracelets (25), rings, and teeth and buttons (18) covered with thin sheet metal. That the more elaborate pieces were overlaid is shown by a headdress with wooden antlers covered with copper. A few skulls have been found to which, after death, copper objects were added to replace the fleshy part of the nose. Knowledge of the uses of the various kinds of ornaments is based on their position in graves in relation to skeletons; on native sculpture showing ear plugs, etc.; and on pictures made by the first European artists to draw the Indians.

The most elaborate ornaments are those plates of sheet metal which are decorated by piercing, or by repoussé or embossing. That is, they show designs which are made by pressing grooves into the surface or by raising sections by hammering from the back. The designs used on these plates will be discussed in Section 14.

In historic times the Northwest Coast tribes have made copper neck rings of heavy twisted rods, ornaments of various kinds and the "coppers" mentioned in section 6 (34). Copper was also overlaid on wood and metal objects, such as masks and knives. In the mid-19th century the Navaho learned metal working from the Mexicans and made copper ornaments to some extent. But silver soon became the favored metal. Today copper is again being used for jewelry in the Southwest. Prehistoric southwestern copper work is discussed in Section 15.

14. DESIGNS. The designs which appear on copper plates, and the shapes into which the plates were cut are either abstract geometrical forms or more or less conventionalized representations of men, animals, and birds. In the

former group are found swastikas (30), circular and angular forms pierced with various abstract designs, and a number of curvilinear forms (27, 29, 31, 35). Many of these abstractions are extremely beautiful in composition, well illustrating the high degree of artistic ability possessed by these prehistoric Indians. The conventional idea that all Indian art is crude and barbaric is well confuted by these graceful forms, which may be favorably compared with the metallic productions of other peoples and periods.

Possibly of greater interest because of the human element involved is the second type of design, that showing the forms of living creatures (32, 33, 36). Men (32) and eagles (36) are by far the most common subjects. The most striking of these designs show the figures of elaborately masked and costumed men, usually executing the steps of a dance (32). To one who knows little of Indians the figures should be of interest because of the pictures they evoke of a bygone epoch filled with brilliantly costumed men moving through the steps of savage ceremonials. To the student they have another interest. For the character of the costumes clearly shows the connection which once existed between the tribes of the Mississippi Valley and the more famous Maya and Aztec peoples of Mexico. In many details the figures of masked dancers from the two areas are almost identical. The resemblance is so close that there is no doubt but that there was some sort of connection between the two countries. Of interest to students of design is the presence of copper plates showing double-headed eagles. The use of this design by various Indian groups is often attributed to European influence. But these prehistoric plates prove that a form of the design is native to America.

15. SOUTHWESTERN COPPERWORK. Information on this subject is very scanty. The metal is found in many places in this region, but as the remains of native mining operations have not been found it appears that the Indians used float copper. Pieces of metal have been found near mines worked today. The copper objects which have been found are of two types, bells and beads. The bells (28) are small, being an inch or less in diameter. They are more or less globular, with an opening on the side or bottom and a ring for suspension on the top. The clappers are pebbles. The beads are cylindrical in shape and about an inch in length. Both types have been found in many places in Arizona and New Mexico. But they are rare everywhere in the region.

Scientific tests made of the structure of the copper show that the bells were made by casting by the lost wax method, see Section 19. The beads were made by hammering the metal into sheets and bending them into shape. Analysis shows that the metal used in making these objects came from the Southwest and not from Mexico.

These facts make up a puzzling picture. Metal casting was done in Mexico and apparently unknown in the United States. Yet the copper in these bells and beads came from north of the border. Reference 17 suggests that these contradictions and the small number of specimens may be explained by the

presence in the Southwest of wandering metal workers from Mexico who made a few pieces with the local metal. Most of these copper objects are found in ruins dating from the 14th to 16th centuries, though a few from southern Arizona are several hundred years earlier. During this period the casting of copper was well understood in Mexico. Reference 4 describes what appeared to be the remains of crude smelting ovens. But information is lacking as to whether these findings of over 40 years ago have since been supported by recent archeologists.

16. COPPER AS A PRESERVATIVE. This section has nothing to do with Indian use of the metal, but it is interesting to note that copper has the power to preserve perishable objects with which it has been kept in close contact for long periods of time. Most of our knowledge of the cloth and other substances which decay easily is due, in copper-using areas, to the finding of such materials wrapped around or lying in close contact with copper objects.

17. COPPER AS PAINT. Various compounds of copper have been used by Indians in the manufacture of blue and green paints. This practice exists today, and archeological investigations indicate that it did so in prehistoric times.

18. APPEARANCE OF COPPER OBJECTS. Copper which is long exposed becomes coated with a green basic carbonate often called verdigris. This is especially true where there is some moisture. The vast majority of old Indian-made copper objects show this mottled green color. The verdigris can be removed, restoring the red surface.

19. BRONZE. Because this metal alloy contains a large proportion of copper a brief note about it is included in this leaflet, though it was not made nor used by the Indians of the United States and Canada. Bronze is made by melting together about 90 per cent of copper and 10 per cent of tin. The proportions vary considerably, there often being less tin. Ore containing copper sometimes also bears small amounts of tin, so that when the ore is smelted the two metals combine. But the amount of tin is very small, not sufficient to produce bronze. This accidental mixture is sometimes found in the metalwork of native peoples.

But certain Indian groups in Peru, Bolivia, Argentina and other South American countries had learned how to add enough tin to produce true bronze, and had also discovered the art of casting the alloy. Many examples of their work, in a wide range of shapes, have been found in prehistoric sites. Casting was done by the *cire perdue* or lost wax process. A wax model of the object desired is made and covered with clay. The mold is heated and the melted wax runs out, leaving its impression inside the clay mold. Molten metal is then poured into the mold and cools in the form of the wax original.

Copper casting was done by the Indians of Mexico, but not bronze casting. And the tribes of the United States and Canada produced neither.

Compiled from the following sources by F. H. Douglas:

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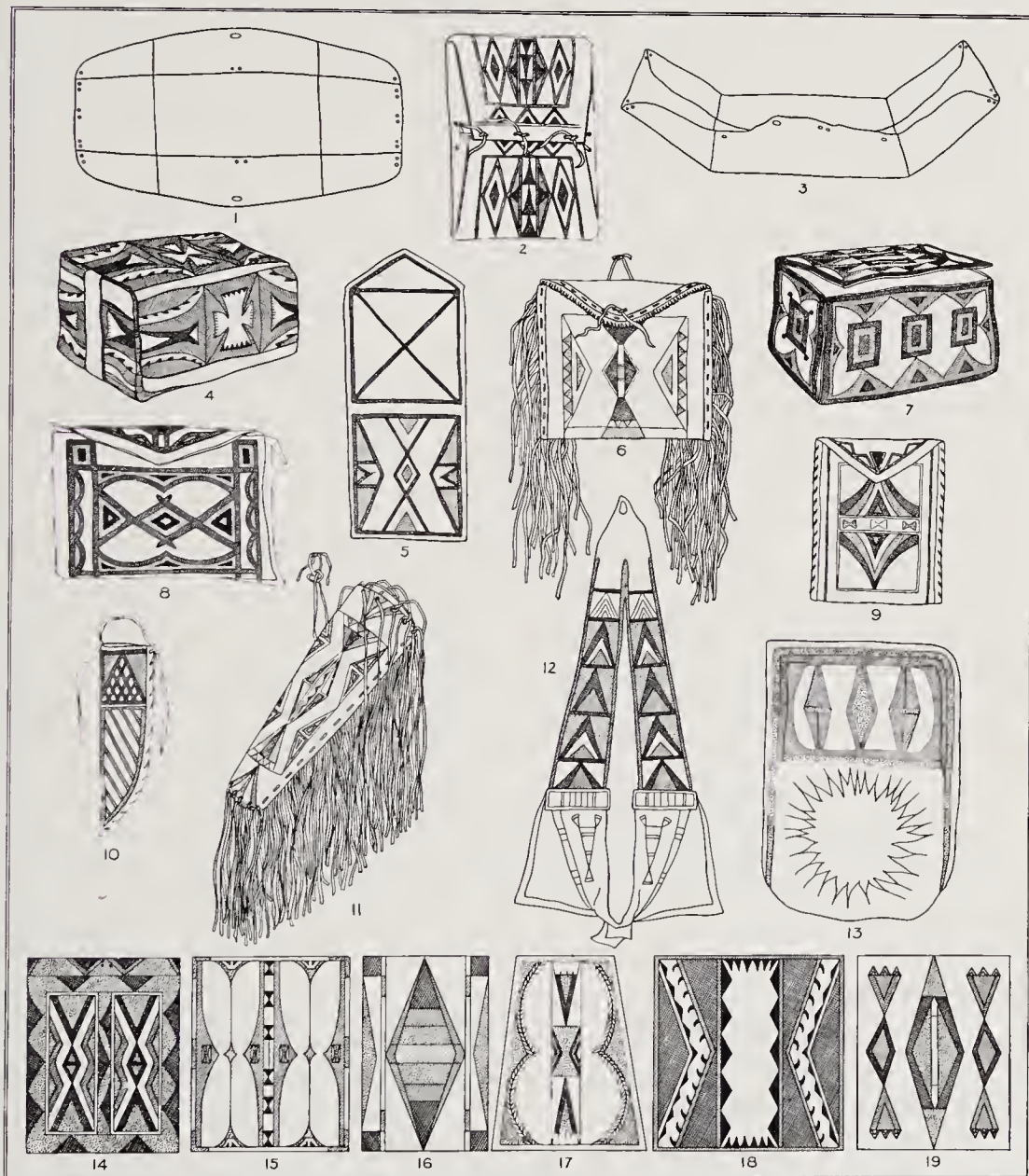
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Drawn by Betsy Forbes

PARFLECHES AND OTHER RAWHIDE ARTICLES

LEAFLET 77-78
DECEMBER, 1936

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1. INTRODUCTORY. Containers of rawhide occupied a very important place in the lives of many large groups of western Indians in historic times. Before the horse was introduced by European discoverers and explorers these tribes lived in somewhat restricted areas. This limitation of range was due largely to the fact that journeys had to be made on foot and burdens born by the Indians themselves or by their dogs. The general scheme of life for these tribes, especially those living on or around the great Plains, was to spend the winters in permanent camps and the summers wandering about on the buffalo hunt, or tilling their corn fields. The other rawhide-using group of tribes, who lived across the Rockies in Washington and adjoining parts of Oregon and British Columbia, substituted salmon fishing for buffalo hunting and root gathering for farming, but otherwise followed about the same schedule.

This tendency toward a somewhat sedentary life gave these tribes the leisure to make containers of pottery, basketry or birchbark, depending on the environment in which each tribe lived; and at least semi-permanent places in which to keep these somewhat destructible and bulky articles.

2. HORSES were introduced by Europeans and brought about great changes in Indian life. In the West horses were first brought to the Indians by the Spanish, especially the expedition of Coronado which passed through Colorado and Kansas in 1541. Tribes of the Shoshonean family, the Comanche and various groups of Shoshoni, lived along and in the Rockies from Colorado and Utah to Montana and Oregon, thus forming a contact between the Spanish settlements in the south and the tribes of both the Plains and the Columbia Basin to the north. Largely through them the horse and its furniture—saddles, bridles and the like—were moved to the northern tribes. From this central area horses spread west to the groups across the Rockies and east to the Indians of the northeastern Plains, such as the Sioux and Cheyenne.

How long this process took is not exactly known, but the available evidence indicates that it began sometime in the early 17th or late 16th centuries and was completed by about 1750. It may not have taken so long, for many tribes could have gotten horses long before they were seen and described by explorers.

3. CHANGES DUE TO THE HORSE were many. In the home life of the Indian one change was to accentuate the tendency to wander which these tribes already possessed. They could now travel hundreds of miles with ease. Agriculture was soon abandoned, except by the southeastern Plains tribes, and with this restraining influence gone the tribes spent much more of their time on the march, though winter camps were still made. This new life changed the type of containers used by the Indians. Pottery was too heavy and fragile to be packed successfully on horseback. Those tribes which had made containers of birchbark moved away from the range of this tree. In view of these conditions the tribes turned to rawhide, or undressed animal skin, as an ideal material for the making of containers and various other objects. There was

plenty of it to be had from the hundreds of animals killed for food. It was light, weather-proof and very resistant to wear. And further, the tribal artists could decorate the material easily and effectively.

One group of rawhide objects is united by a common style of decoration. The remaining sections of this leaflet will describe the articles in this group, their distribution, and their decoration.

4. RAWHIDE MANUFACTURE. Hides freshly removed from animals were staked out flat on the ground, flesh side up. With the aid of a scraper of sharpened antler or iron and much laborious toil, bits of fat, meat, dried blood and the like were removed. The hide was then allowed to become thoroughly dry. Sometimes it was treated with warm water to keep it from too great stiffness. After the drying was completed the surface was gone over with a sharp tool which chipped or shaved off thick places and reduced the whole hide to an even thickness. The final step was the removal of the hair, which was scraped off after the hide had been turned over and staked down again.

The hide thus prepared was from $\frac{1}{16}$ to $\frac{3}{16}$ of an inch in thickness. It was stiff, but bent without cracking and became fairly flexible with use, especially at folds. The surface was hard and smooth, the hair side being the smoother. Fresh rawhide is a light cream in color on the average. It darkens with age and use.

5. ANIMALS USED. In the old days the buffalo provided most of the rawhide, with elk and extra thick deer skins supplying the rest. In more recent times the hides of domestic cattle and of horses have been used.

6. DISTRIBUTION. Rawhide was used by the tribes occupying the Plains between the Mississippi and the Rockies from Texas north to southern Canada (group 1); the tribes along the central Mississippi Valley (group 2); and around the western end of the Great Lakes (group 3); various tribes living in the eastern ranges of the Rockies (group 4); and to a lesser extent by the tribes of eastern Washington, southern British Columbia and the mountain areas between these and the Plains (group 5). The tribes listed below are known to have used rawhide containers and other articles of one form or another.

- | | | |
|--------------------|----------------------|----------------------|
| 1. Arapaho | 12. Dakota or Sioux | 23. Klikitat |
| 2. Arikara | 13. Flathead | 24. Kutenai |
| 3. Assiniboin | 14. Fox | 25. Mandan |
| 4. Bannock | 15. Gros Ventre | 26. Menomini |
| 5. Blackfoot | 16. Hidatsa | 27. Mescalero Apache |
| 6. Cheyenne | 17. Ioway | 28. Nez Percé |
| 7. Coeur d'Alene | 18. Jicarilla Apache | 29. Okanagon |
| 8. Colville | 19. Kalispel | 30. Omaha |
| 9. Columbia Salish | 20. Kansa | 31. Osage |
| 10. Comanche | 21. Kickapoo | 32. Oto |
| 11. Crow | 22. Kiowa | 33. Paiute |

| | | |
|--------------------|-----------------|------------------|
| 34. Pawnee | 41. Sarci | 48. Ute |
| 35. Pend d'Oreille | 42. Sauk | 49. Warm Springs |
| 36. Plains Ojibwa | 43. Shoshoni | 50. Wasco |
| 37. Ponca | 44. Shuswap | 51. Wichita |
| 38. Potawatomi | 45. Similkameen | 52. Wishram |
| 39. Sanpoil | 46. Thompson | 53. Yakima |
| 40. Santee Dakota | 47. Umatilla | |

This alphabetical list breaks up into the geographical groups as follows:

Group 1. 1, 2, 3, 5, 6, 10, 11, 12, 15, 16, 22, 25, 34, 41;

Group 2. 17, 20, 21, 30, 31, 32, 37, 51;

Group 3. 14, 26, 36, 38, 40, 42;

Group 4. 4, 13, 18, 24, 27, 28, 33, 43, 48;

Group 5. 7, 8, 9, 19, 23, 29, 35, 39, 44, 45, 47, 49, 50, 52, 53.

It should be understood that all of these tribes did not use all of the rawhide articles mentioned in this leaflet. The general distribution of each type will be indicated under each heading when possible.

It should also be noted that all of the tribes who used rawhide articles did not make them but obtained them by trade with other groups. This is especially true of some of the tribes in group 5. Other tribes knew how to make such articles, but rarely did so.

TYPES OF RAWHIDE ARTICLES

7. PARFLECHE (par-flesh). This word appears to be derived from two French words, **parer**, to parry, to ward off, and **fleche**, arrow. It was apparently first applied to shields, but later came somehow to be given to the large painted envelopes which are the most important rawhide articles used by the Indians. The name is only employed by non-Indians, each tribe having its own word for the article.

The parfleche is made of an oblong piece of rawhide with straight ends and somewhat irregular sides (1). These sides are folded in toward each other until they overlap or at least meet (3). The ends are then folded in the same manner, thus producing a large envelope (2). Holes are pierced for thongs used to tie the ends and sometimes the sides together. There is considerable tribal variation in the arrangement of these holes. The folds are not sharply creased, which allows for considerable expansion of the capacity of the envelope. Parfleches range in size from 1 to 3 feet in length and from 6 to 18 inches in width. Smaller ones are made, but they are hardly more than toys.

Parfleches were chiefly used for the storage and transportation of foods such as pemmican and dried roots. But anything might be placed in them. Since their shape made them convenient for packing on horses, they were often made in matched pairs, one for each side. They have little use today and it is unlikely that many are being made. When worn out, pieces were often cut from them to make moccasin soles.

Parfleches were in common use among all of the tribes on the list. They seem to have been most used on the central and northern Plains and proportionately less as the distance from this center increased.

8. TRUNKS. A number of tribes in the central Mississippi Valley and west of the Great Lakes made rawhide trunks or boxes. These are made in two ways. One group of tribes, Sauk, Fox, Kickapoo, Menomini and Potawatomi, fold a single oblong piece into the required shape and fasten it by sewing (4). The other group, Ioway, Oto, Ponca, Santee Dakota, Plains Ojibwa, Kansa, Osage and Omaha, cut one or more pieces according to a pattern. These are folded and sewed together (7). A third form, used by the Oto especially, combines these two methods. The trunks are from 1 to 3 feet long, 6 to 18 inches wide and about 1 foot deep. Some have their depth and width about equal, while others are considerably less wide than deep. The Sauk type has a front flap besides a lid: the Ioway type has only the lid. The sewing is sometimes done rather coarsely with thongs passing through holes, or finely with sinew thread. Both materials may be used on the same box.

The decoration of these two types of boxes is of interest. The designs which are to appear on boxes of the Sauk type are applied to the hide before it is folded. In this state the design is carefully and symmetrically worked out. But when the hide is folded the pattern is broken up and its plan entirely disrupted. The designs in Ioway type boxes are arranged in panels so that when the folding is done each panel falls into its place on the trunk without destroying the design. This interesting state of affairs is discussed in reference 23.

9. RECTANGULAR BAGS OR POUCHES were in common use among most of the tribes on the list. Most of them are made of a single piece of rawhide, somewhat longer than wide (5). The bags open either on the long side (8) or the short (9), the latter being perhaps more often seen. One short side or one long side, depending on the type, is extended to form a flap, usually pointed like that on a paper envelope, but sometimes having several points or a curving or straight edge. The flaps vary greatly in width. They are held down by a thong passing through them and the fronts of the bags. The sides which are brought together by folding are fastened in place with a thong or thongs passing through holes cut in the hide. Two pieces may be sewed together to make a bag of this type. Often the junction of the edge is bound with cloth before the sewing is done. Some bags have a very narrow piece inserted between the edges to give a little more depth. Another type has no flap, but only a narrow slit at one end. Sometimes there are thong handles. These bags are of many sizes and shapes, something approaching a square being perhaps more usual. The long sides are from 6 to 20 inches, and the short sides from 6 to 15.

Certain tribes, notably the Blackfoot and others in the north, decorate these angular bags with very long and heavy fringes down the sides (6). These are for ceremonial paraphernalia.

10. CYLINDRICAL CASES. For carrying rolled up feather war bonnets and long ceremonial objects many Plains tribes made the case shown by 11. It is made of a sheet of rawhide rolled into a tube somewhat larger at one end than the other. The edges are fastened together by thongs passing through holes. The top and bottom are closed by disks of hide also held in place by thongs. In their fullest development these cases are decorated by very long heavy fringes attached to the seam and around the bottom. The size of the fringe varies according to tribal custom. The cases are from 10 to 30 inches long. The diameter of the ends is from 3 to 10 inches.

11. KNIFE SHEATHS (10) for carrying large open hunting knives usually have a rawhide back and a beaded or quilled front of softer skin. But they may be made entirely of rawhide. A single piece, cut to a pattern, is folded and sewed along the edges. There may be a top flap. Size depends on the knife to be carried.

12. EYE SHADES (13) were occasionally made. They were caps with a wide visor and no crown, the latter being replaced by a series of serrations which gripped the sides of the head.

13. CRUPPERS (12). Those tribes which used elaborate horse trappings, such as the Crow, made rawhide cruppers extending from the rear of the saddle to beneath the horse's tail. They kept the saddle from sliding forward and also served to decorate the animal. In the illustration that part of the design which is left in outline is beaded.

14. MISCELLANEOUS. Besides the objects so far mentioned the Indians made a number of other things of rawhide. But because they were not decorated with the style of painting and design peculiar to the parfleche they are not described in detail in this leaflet. This group includes the large, round bull boat of the Upper Missouri tribes, buckets, dippers, cups, drumheads, rattles, shields and shield covers, cradles, and mortars for pounding meat and fruit.

15. DECORATION. The rawhide objects described in some detail in this leaflet share a common design style. This style is marked by the presence of rather simple organizations of geometric figures in symmetrical patterns. The elements making up the designs tend to be large and plain. Small decorative details are relatively infrequent (18), being most common in the Northwest. Bright color is a prominent feature of the style.

The designs were applied by two methods: incising or scraping; and painting. Of these painting is overwhelmingly the more common. Indian tradition says that incising is the older method and the existence today of only a handful of specimens showing this technic, all giving every appearance of age, bears out this story. By this method portions of the outer layer of buffalo skin were scraped away, or into this layer lines were cut which widened as the skin dried. The technic produced light lines and pattern areas on a dark brown background. The painted designs almost universally used were applied with

various sorts of brushes after the outline of the design had been drawn in with a pointed tool.

Some tribes drew the outlines of a number of parfleches or other articles on a hide and painted designs on them before cutting the hide. Others cut out the pieces before decorating them.

Tribes which lived around the edges of the rawhide-using area were inclined not to decorate their parfleches, trunks and so on. The Comanche of the southern Plains, the Menomini and Potawatomi in the Great Lakes region and the Thompson of British Columbia are examples of this tendency. Several tribes in group 5 did not remove the hair from the hide before making it into containers. This was an early practice in this area which tended to die out as painted rawhide spread from the east.

16. COLORS. Red, blue, green, yellow, black and brown are the colors used, other shades rarely if ever appearing. In recent years commercial colors obtained from traders have been used. Before their coming paints were made from colored earths, charcoal and various plants. They were often mixed with grease.

17. DESIGNS. The patterns appearing on rawhide containers are placed in angular spaces unless the shape of the object prevents this. More or less square areas are preferred. The designs appear on the tops of the end flaps of parfleches, less commonly on the inner flaps and backs; on the fronts and sometimes backs of envelope pouches; on all sides except the bottom of trunks; on the sides and ends of cylindrical cases; and on the upper surfaces of sheaths, eye-shades and cruppers.

There are three main types of designs: those made up entirely of triangular elements (14, 19); those combining squares and triangles (16); and those containing only squares. The first is the most common, and the last, the least used. The designs are usually enclosed by boundary and paneling lines arranged in many ways (14). Lines are generally straight but curves are not unknown (15, 17), though in some cases they may be unintentional. Each tribe tends to favor certain combinations and several groups of tribes also have their favorite patterns. But on the whole it is impossible to definitely assign any given article to one tribe. Only the group may be fairly accurately identified. Any statement about the basis for identification is beyond the scope of this leaflet. References 1, 5 and 7 contain full analyses of tribal and group styles. Identifications of drawings: 14, Ute; 15, Cheyenne; 16, Crow; 17, Blackfoot; 18, Salish; 19, Bannock.

18. ARTISTS. All work connected with making rawhide articles is done by the women. They prepare the hides, cut out the articles and do the decorating. Among Indian tribes abstract design is usually the province of women, while realism is handled by men. This is true in the case of Plains rawhide painting.

19. SYMBOLISM in the designs on rawhide containers depends on tribal custom and individual desire. There is no widely recognized system of symbolism, each artist deciding whether the design shall be decorative or symbolic, and, if the latter be the case, what it shall mean. On the whole symbolism is uncommon in designs of this type.

Compiled from the following sources by F. H. Douglas:

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INSTITUTTET FOR SAMMENLIGNENDE KULTURFORSKNING, OSLO

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Illustrations in all but 12, 18, 20, 21, 22. Color plates in 9. 4 illustrates a parfleche decorated by incising.

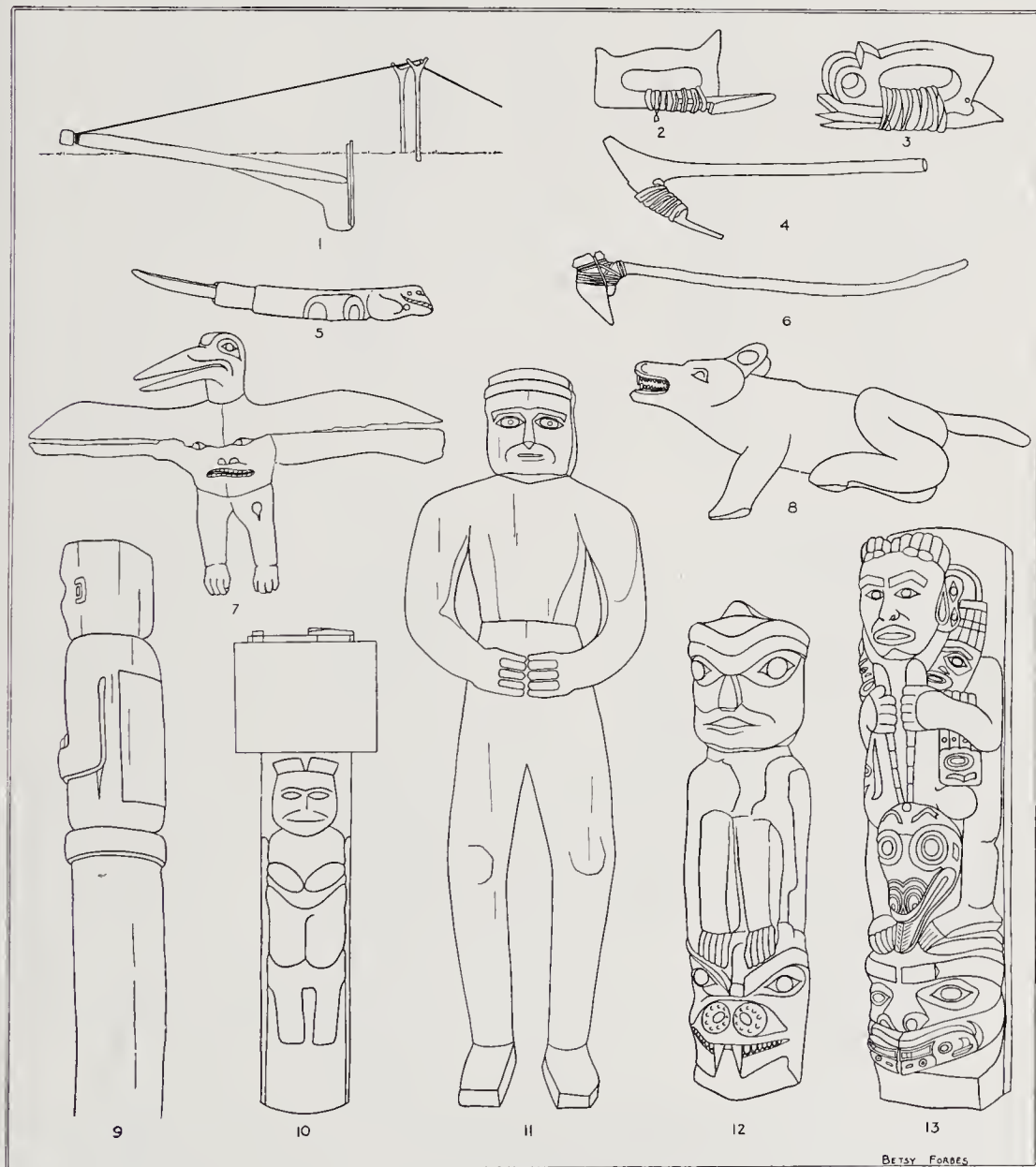
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BETSY FORBES

TOTEM POLES

LEAFLET 79-80

DECEMBER, 1936

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BETSY FORBES

1. TOTEM. This word is derived from the term **ototeman** which occurs in slightly differing forms in Ojibwa, or Chippewa, and various related dialects of the Algonkin linguistic family. In these dialects the word means "his brother-sister kin," that is, the group of brothers and sisters born to one mother, and persons adopted into such a group. Like many other Indian words which have been taken into English, **ototeman** has been shortened without regard to its native grammatical construction. Totem has one letter, **t**, from the first section of the word, three letters, **ote**, from the second, and one, **m**, from the third section.

Many native races in different parts of the world clearly recognize the close connection between groups of persons who are related by blood. To symbolize this relationship a system has grown up of naming groups for different living creatures, such as the bear, eagle or whale, which are thought to be the actual ancestors of the group or to have been very closely connected with its ancestors in the distant past. Thus we find a Bear gens, a Snipe clan or a Raven phratry; gens, clan and phratry being the names of 3 kinds of social groups.

Anthropologists, who are scientists engaged in the study of mankind, have applied the term "totem" to those living creatures which have been chosen as the symbols of these various social groups. The bear is called the totem of the Bear gens, and so on.

2. TOTEMISM is the name of the system outlined above. There is a great deal of variation in the working out of the system and the origins of many of its details are very poorly understood. Space does not permit any further discussion of these questions.

3. NORTHWEST COAST TRIBES. The mountainous coastline, river valleys, and many off-shore islands of British Columbia, Canada, and the adjoining portion of Alaska are occupied by a number of tribes which have highly developed the totemic system outlined in the previous sections. Beginning at Vancouver Island, just north of the national boundary, and moving north these tribes are: Salish, Nootka, Kwakiutl, Bella Coola, Tsimshian, Haida and Tlinkit. The Tlinkit and part of the Haida live in Alaska, the other groups in British Columbia. For further information about these tribes see Leaflets 1 and 72.

4. CHARACTER OF COUNTRY. On both mainland and islands the mountains rise sharply from very near the shore. The climate is very damp and quite mild, a factor which has covered the lower slopes of the mountains with dense forests of very large trees producing wood suitable for carving and building. Because of the roughness of the topography the tribes have no agriculture, obtain most of their food from the sea and travel almost entirely by boat.

This combination of circumstances, added to a strongly developed sense of pride of descent and family, produced among these tribes a great school of sculpture in wood, for which the totems of the social groups are the highly favored subjects. The most celebrated products of this school of sculpture are the various kinds of immense carved wooden columns which are commonly known as totem poles.

5. EARLY HISTORY. The Northwest Coast tribes were first generally investigated by Europeans in the last quarter of the 18th century, beginning in 1774. The Russian explorer Bering had visited the northern part of the area in 1741, but he only saw a few natives from his ship. The southern part of the area was visited by several expeditions in the next 15 years, but the whole area was not carefully examined until the 1790's. Most of the exploration was from ships, but at least one expedition, that of Mackenzie in 1793, came overland from eastern Canada.

The first explorers make little mention of carvings which might come under the head of totem poles. Large posts supporting roof beams are mentioned as being carved, but a profusion of carved columns does not seem to have existed. It is true that many of the earliest explorers did not land, contenting themselves with what could be seen from their ships. This was very little, as the villages could not be easily seen from large ships moving carefully through strange and dangerous waters. It seems safe to conclude that though the carving of large poles was done it was not a common practice of wide distribution. The great development of the custom in later days was largely due to the introduction among the natives of metal tools.

6. IRON was found among these tribes by the first explorers. As it is not produced in the region it must have come from elsewhere by way of long established Indian trade routes north and south. The Russians had been in eastern Siberia and on the Aleutian islands long before the discovery of the coast, and iron could have passed from their settlements to Alaska and south along the American coast. Iron could also have come north from the Spanish colonies in California. It has been suggested that iron may have been obtained from Chinese and Japanese vessels which had been wrecked on the American coast. Such wrecks have occurred in historic times.

When first extensively visited the Indians knew about metal tools and wanted iron more than anything else offered in trade by the whites. The naval explorers and the traders who soon followed them supplied this demand, so that by the early years of the 19th century enough metal tools were available to make possible a great extension of the carver's art.

7. LATER HISTORY. The coming of the fur traders brought a great increase in wealth to the coast Indians. They have a great respect and desire for wealth and a strong sense of family and descent. The totem pole was the means of displaying their family connections, and their new wealth made

possible the setting up of larger and more numerous poles. As a result of these circumstances the practice of carving totem poles of all kinds received a great impetus. The fullest and widest development of the art was between 1830 and 1890, though among the Haida it was well established by at least 1800. Since 1890 there has been a great decline, though the custom is not entirely extinct.

8. TYPES OF TOTEM POLES. The term "totem pole" is rather loosely applied to 5 groups of large carved wooden objects; 1, immense tall columns standing erect before long rows of houses, the memorial column (15, 16, 18, 20); 2, similar columns attached to the fronts of houses, the house frontal pole (19); 3, columns containing openings in which coffins were placed (9), or having the coffins set on their tops (10), the mortuary column; 4, comparatively short thick posts set inside houses to support the roof beams, the house post; (12,13); 5, grave figures—representations of single human (7), and animal figures (8, 11)—placed as memorials in cemeteries. Poles of the first type, of rather small size, were also sometimes placed in cemeteries (14,17).

9. MAKING A TOTEM POLE was an expensive and difficult task. The many elaborate customs connected with the process cannot be described in this leaflet. A suitable tree was selected in the forest, cut down and trimmed. Unless very near a village it was dragged to the sea or river, towed to the village and laid out on land on supports which brought it within easy reach of the carver's tools. The carver was hired by the owner of the pole and was told by him what designs to use (see section 14). The subjects having been chosen, the carver marked out the outlines of the design on the log. As many details of these designs were fixed by custom it was sometimes possible to use patterns of cedar bark or hide to assist in laying out the design. To make the pole lighter and easier to handle much of the back was often hollowed out. This was especially true of types 2 and 4, which were reduced to crescents. Poles were not necessarily carved from top to bottom. Some examples, notably older ones, were carved at the bottom only, or at top and bottom (14). The designs on the oldest poles are likely to be single figures placed one above the other. Closely interlocking arrangements of figures came later. The carvers of the oldest poles seem to have been mask makers who cut these familiar objects in a row on the pole. The idea of a unified design especially adapted to fit on the long narrow tree trunk came with the expansion of the custom of erecting poles. The older poles had little painting, while later ones show a great deal. The old native mineral colors, chiefly red, green and black, were applied only to important features such as eyes, lips, ears, etc. The later commercial paints, of many colors, were used much more extensively.

The poles were erected by digging a pit with one sloping side, dropping the butt into this pit and bringing the top upright by pushing and pulling with poles and ropes (1). The problems of moving very large timbers were thoroughly mastered by these Indians, though they had no machinery.

After erection poles received little care from the owners and their descendants. The green, untreated wood rotted fairly fast in the damp ground and climate. Most poles fell in 40 to 50 years, though some might last 75. Once fallen they were allowed to decay or were cut up for fire wood. Only a tiny percentage of the poles set up in the 19th century still survives. Government agencies have restored certain groups.

10. TOOLS. Are shown on the cover (2-6). Before metal was obtained the blades were made of jade or other stone, shell or bone. Jade made the strongest and sharpest blades. Adzes were the chief tools even for fine details.

11. KIND OF WOOD. The red cedar, *Thuja plicata* (*Thuja gigantea*), provided the raw material for totem poles in its range, which is from southern Vancouver Island to Frederick Sound, about as far north as Sitka. This tree is very tall and relatively slender, with soft wood which splits and carves easily.

North of Frederick Sound, among the northern Tlinkit, the only available trees for totem pole carving are the yellow cedar, *Chamaecyparis nootkatensis*, and the Sitka spruce, *Picea sitchensis*. Totem pole carving was extremely uncommon in this area, and reference 18 suggests that these trees must have been used. Definite information is lacking.

12. SIZE. (Refer to section 8). Poles of the first type ranged from 15 to 70 feet high and from one to three feet in diameter. 40 to 50 feet was an average height. The poles of the Haida, type 2, which were attached to the fronts of houses and through which round door openings were cut, were much thicker through the bottom in proportion to height than the poles of that and other tribes which stood detached from the buildings. Diameters were up to 5 feet. Poles of the third type were shorter and thicker, averaging about 30 by 3 to 4 feet. House posts were still shorter, 10 to 15 feet, and about 3 feet in diameter. Grave figures, the fifth type, were 3 to 10 or 12 feet high. Their diameter depended on the subject. Human figures were slender, while birds and animals were more bulky.

13. PURPOSE OF TOTEM POLES. Type 1 poles were erected as memorials to the dead and to preserve the name and fame of these persons by means of their carved designs. House frontal poles, type 2, served to indicate the family of the house owner by displaying his totemic crests. Both of these varieties might display figures illustrating or telling myths connected with the owner's family. House interior posts, type 4, showed either family crests or legendary characters, according to the customs of the various tribes. Thus Haida house posts usually showed family crests, while those of the Salish, Nootka, Kwakiutl (12) and Tlinkit (13) had to do with legends. The purpose of the coffin-bearing and grave-marking posts, types 3 and 5, is indicated by these descriptive titles.

A motive for erection common to all of these types was pride of family. Each group tried to glorify itself and shame its rivals by setting up the largest and most elaborate poles possible.

Totem poles have nothing to do with religion and are not idols.

14. DESIGNS. The totemic system (see section 1), is highly developed among these tribes and the totems are the chief subjects of the carvings on poles. The designs are relief carvings representing the more or less conventionalized figures, or important parts of them, of humans and animals, both real and imaginary, which are hereditary family crests, or characters in the tribal mythologies. Each well-born person owns one or more of these crests and sets forth his or her family membership by displaying them. Certain myths are connected with each family and these are illustrated on the poles by carving the characters occurring in them.

15. ORIGIN AND SPREAD OF POLE CARVING. The carving of tall, slender poles of the first two types seems to have originated in the central part of the area, among either the Haida or Tsimshian, and these tribes produced the greatest development of the practice. The tribes to the north and south were carving house posts and grave figures in the late 18th century, but they do not seem to have adopted the custom or erecting tall totem poles until somewhere around the middle of the 19th century or later. Grave figures and house posts were apparently common to all groups from north to south, but among these groups the number and quality of the tall types of poles depended on the nearness of each group to the center, those farthest away from it having the smallest development. Thus the Salish had only a few crude grave figures. The Nootka, next to the north, had some rough totem poles. The Kwakiutl and Bella Coola, toward the end of the 19th century, made quite elaborate poles and grave figures. North of the center the southern Tlinkit carved poles much like those of their Tsimshian neighbors, while the northern Tlinkit made nothing but grave figures, house posts and coffin poles. In 1882 Emmons found only about a dozen very poor poles among the 8 northern Tlinkit tribes.

16. TRIBAL STYLES. This subject is much too large for extended discussion in this leaflet, but a few general remarks may be made. Haida poles have a more evident taper than other types (20). The figures are rather square-cut, detailed, and closely knit. Tsimshian poles are notably slender (18). The figures are inclined to be simple and curving, and flow into each other rather than interlocking in the Haida manner. The relief is less high than on Haida poles. Tlinkit poles (16, 17) have both Haida and Tsimshian features, having the square-cut style of the former and the simplicity of the latter. The poles of the Bella Coola may be distinguished by their shape (19). They are notably short and broad, with a distinct taper, and are hollowed out behind to an extreme degree. Their relief is low and the details of the carving much smaller than on the northern poles. Northern Kwakiutl poles (15) are inclined to be somewhat spiritless imitations of a combined Haida-Tsimshian style. They have the outward forms to a considerable extent, but little of the artistry of conception and execution shown by the two leading nations. Poles of the Nootka and southern Kwakiutl are chiefly distinguished by their crudity. They are only pale echoes of the great styles.

Since about 1890 some Tlinkit (17), Nootka, Salish, and Southern Kwakiutl poles have been trimmed with wings, sun figures, etc., made of rather thin boards projecting from the sides. Bird beaks (18) and various figures set horizontally on top of poles were made of separate pieces of wood and attached to the main poles. Those groups which placed coffins on the tops of mortuary columns often made columns with a board cut to the size of one side of a coffin box set across their fronts at the top.

To indicate which of the two great types is the best is of course impossible. Some authorities feel that the Haida excel in technic and elaboration, while the Tsimshian display more purely esthetic feeling and composition; others reverse this opinion, or judge by different standards.

Compiled from the following sources by F. H. Douglas:

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18. Letter from G. T. Emmons, Victoria, B. C., 1/17/37.

Thanks are due to W. A. Newcombe, and to Marius Barbeau, National Museum of Canada, for help in preparing this leaflet.

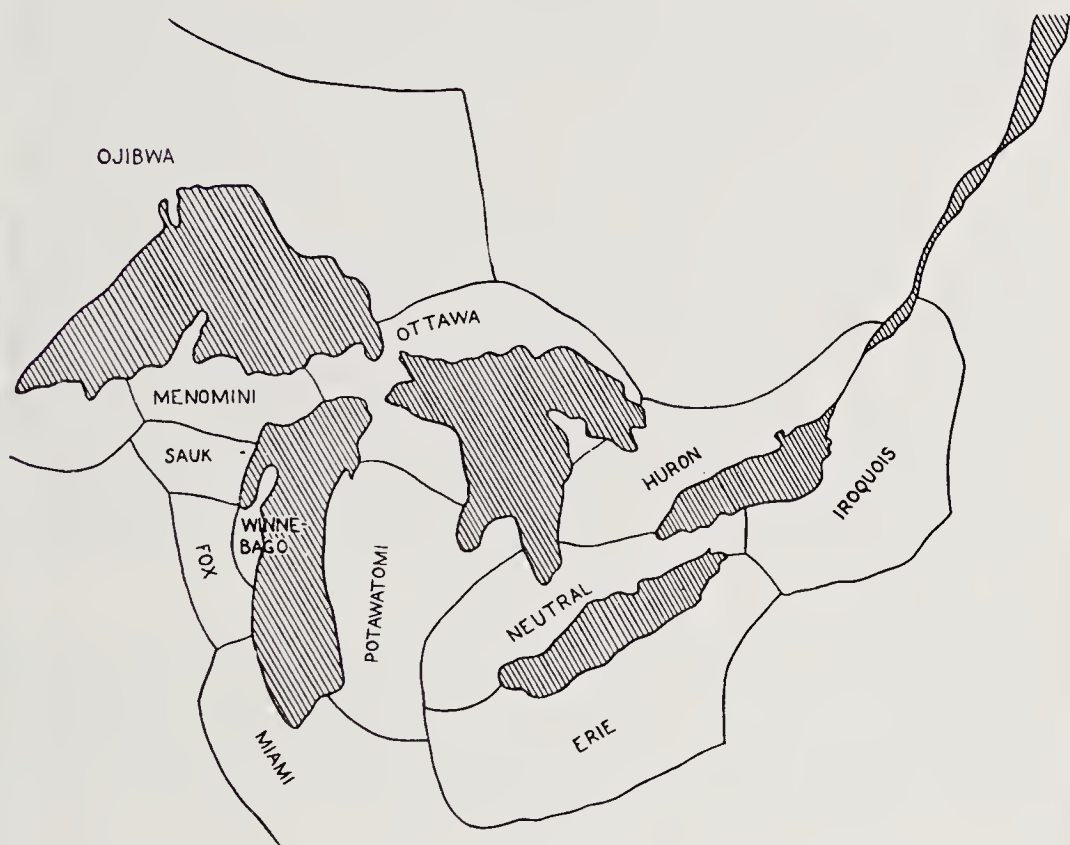
Illustration acknowledgments: AMNH; 6, 7, 9, 13, 14, 20. USNM; 2, 4, 5, 8, 10, 15. UW; 3. PMBC; 11, 12. NMC; 1, 18, 19. Reference 16; 16, 17.

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NORMAN FEDER, *Curator*



This map shows approximately the 17th century locations.

Courtesy of Dr. George P. Murdock

TRIBES OF THE GREAT LAKES REGION

LEAFLET 81

DECEMBER, 1937

Reprinted December 1969

1. LINGUISTIC STOCKS. The tribes which lived around the Great Lakes at the time of their discovery belonged to three linguistic stocks, Algonkin, Iroquoian, and Siouan. See Leaflet 51-52 for further information about Indian linguistic stocks.

2. POPULATION FIGURES are very difficult to obtain. Many of these eastern tribes do not live on reservations and are not included in censuses. Uncounted others are scattered throughout the nation. The remnants of broken tribes live with and are counted with other groups. The figures given in this leaflet are at best only fair approximations of the numbers found in the large settlements and groups of settlements, both on and off reservations.

3. WHITE BLOOD is abundant in all of these tribes, few full-blooded Indians being found.

ALGONKIN

4. TRIBAL MOVEMENTS. After the coming of the French into this region in the early 17th century all the tribes of this stock except the Ojibwa, Menomini, and Ottawa were forced into southern and western movements, passing out of Michigan and Wisconsin across northern Ohio, Indiana and Illinois to their present locations as given below. The Ojibwa, Menomini, and Ottawa have remained approximately in or near their old homes.

5. CULTURE. The manner of life of this group of tribes is best described in the following adaptation from "The American Indian" by Clark Wissler. Food provided by raising corn, beans and squashes, by wild rice and maple sugar, by hunting and fishing; pottery slightly developed, wood and birchbark vessels being used instead; some splint basketry; two types of house were used, a dome-shaped bark or mat covered wigwam for winter, a rectangular bark house for summer, though the Ojibwa tended to use a conical bark house; birchbark and dug-out canoes were common; skin shirt, leggings and breechcloth for men, skin skirt and jacket or sometimes a one piece dress for women; soft soled skin moccasins for both sexes, as also skin and rabbit skin robes, bags and belts of bark fibre and, later, wool, woven on simple frames; mats of cedar bark and reeds; work in wood, stone and bone weakly developed, decorative art with quills and beads tending toward non-geometrical forms, though geometric forms were not uncommon earlier; a gens organization, no social classes or formal property distinctions; a secret initiation into an esoteric society called the Midewiwin or Medicine Lodge; a well developed scalp dance, fixed ritualistic procedures in conducting a war party; ceremonial bundles for war, hunting and also for social groups; complex mythology, dealing in part with Manitou beings; elaboration of song rituals for many phases of routine life; specialization in root and herb formulas for treating the sick, but some shamanistic traits, as the juggler's lodge and tricks.

6. CHIPPEWA. See below under Ojibwa, of which Chippewa is a corruption.

7. FOX. Native name, "Meskwakiagi," "Red Earths." "Fox" is a translation of the name of one group in the tribe, "Wagoagi," the Föx gens. It was applied to the whole tribe by the French. The name "Outagamig" is sometimes used. It is derived from the Ojibwa name for the Fox, "Utagamig," "They of the other shore."

441 Fox live today at Tama, Iowa. A few others live with the Sauk in Kansas and Oklahoma. The tribe formerly numbered perhaps 1500.

8. MENOMINI (Me-náh-mih-nee). Derived from the native name "Manomanewuk," "Wild rice men." The present reservation in Shawano county, northeast Wisconsin, was established in 1856. The present population is 2221, an increase over past years. Its former number was about the same.

9. MIAMI (Me-á-me). Probably derived from the Ojibwa name for the tribe, "Oumau-meg," "People who live on the peninsula." The native name appears to have been "Twanh-twanh," the cry of the crane, which was corrupted into "Twightwees" by early writers. 287 Indians listed as Miami live in Oklahoma. In 46 of the 92 Indiana counties live some 300 Indians, the majority of whom appear to be of Miami extraction. Both of these Miami groups are much mixed racially.

10. OJIBWA (O-djib-way). There are two suggested origins for the name. The more recent and likely derives it from "ojibiweg," "those who make pictographs;" this word being derived from "Nindojibiwa," "I mark or write on some object." The older explanation derives the term from "ojibubway," "to roast till puckered up," referring to the puckered seam of the tribal style of moccasin. "Anicinabe," (Ah-neé-cih-na-be) "First man," was the tribal name.

The tribe is now found on 10 reservations in Minnesota, 4 in Wisconsin, 1 each in North Dakota and Montana, and on several in Canada. About 4000 of the tribe live in Michigan, but not on reservations. There are about 30,000 Ojibwa in the United States and about 20,000 in Canada, 50,000 altogether. The United States group is the third largest tribe in our borders, being exceeded only by the Sioux and Navaho.

11. OTTAWA (ót-tah-wah). The word is a corruption of either one of two Indian expressions: "adawe" (ah-da-way), "to trade"; or "Outaouan" or "Outaouaks," a name for a river on which the tribe once lived.

Since about 1830 the tribe has been in its present locations. About 2700 live in scattered settlements along the eastern shore of Lake Michigan in Michigan; about 1500 live on Cockburn and Mantoulin Islands in western Ontario, Canada; and about 400 live in extreme northeastern Oklahoma. The total number of the tribe is about 4600.

12. PIANKASHAW (Pee-áng-ka-shaw). A division of the Miami. The name is possibly derived from "payangitchaki," "those who separate." The few dozen survivors are with the Peoria in Oklahoma.

13. POTAWATOMI (Po-ta-wá-to-mee). Possibly derived from the Algonkin word "Potawatomingk," "people of the place of fire." Another meaning of the name is given as "keepers of the fire." The tribe is at present distributed as follows: 2650, called the Citizen Potawatomi, in central Oklahoma; 1000 in northeast Kansas; 425 around Arpin, Wood county, central Wisconsin, called, with those of Kansas, the Prairie Potawatomi; 850, as estimated in 1933, in and around Forest county, northeast Wisconsin, called the Forest Potawatomi; about 300 in Van Buren county, south Michigan, the so-called Potawatomi of Huron; and about 250 in western Ontario, Canada, mostly on Walpole Island in Lake St. Clair. This makes a total of about 5425 members of the tribe.

14. SAC AND FOX. The Sauk (or Sac) and the Fox were so closely associated in early times that they came to be considered as one tribe on government records. Since about 1850 they have not been treated separately, though there are many differences between the two groups. See sections in this leaflet under Sauk and Fox.

15. SAUK (Sawk). Possibly derived from the Sauk word "asagiwa," "they who came forth," but by some derived from "asawakia," "yellow earth." Today there are about 875 Sauk in central Oklahoma and about 125 on a reservation lying in extreme northeast Kansas and running over into Nebraska.

16. WEA (Wée-ah). Possibly derived from the native name "wawiaqtenang," "place of the round or curved channel;" or possibly from "wayahtonuki," meaning "eddy people." A division of the Miami. The handful of survivors are with the Peoria in Oklahoma.

SIOUAN

17. WINNEBAGO (Win-ne-báy-go). A corruption of the Algonkin Ojibwa nickname for this Siouan tribe, "winipig," "filthy water." The native name is "Ho-tcháng-gara," meaning "big fish people." The Winnebago are the easternmost of a group of related Siouan tribes, the others being the Iowa, Oto and Missouri.

The tribe was found on Green Bay. Beginning in 1837 it moved about in Iowa, Minnesota and South Dakota until 1864 when the present Nebraska reservation was established. This group now numbers 1212. The remainder, 1456, are scattered in Wisconsin, mostly in Adams, Jackson, Shawano and Marathon counties. The total number of the tribe is 2668.

IROQUOIAN

18. CULTURE. Quoting from Wissler's "The American Indian": The Iroquoian tribes were even more intensive agriculturists and potters (than their Algonkin neighbors); they made some use of the blow-gun, developed cornhusk weaving; carved elaborate masks from wood; lived in rectangular bark long houses of peculiar pattern; built fortifications; were superior in bone work; maintained a series of masked secret societies, a corn harvest festival, and, above all, a highly developed political organization, or "League of the Six Nations" which made systematic conquests.

19. ERIE (Ear-ee). A French corruption of the Huron word "yenresh," "it is long tailed," referring to the eastern puma. In 1644 the Iroquois of New York practically destroyed the tribe. Many were captured and incorporated with the Iroquois. It is possible that descendants of the Erie are with the so-called Seneca of Oklahoma.

20. HURON (Héw-ron). A French word meaning "bristled or rough haired." The native name was "Wendat," meaning possibly "the islanders," or "dwellers on a peninsula." Between 1648 and 1650 the Huron group of tribes was broken up by the Iroquois of New York, many being killed and the rest captured. Under the name "Wyandot" some Huron groups were settled in Oklahoma in 1867 after living in various places in southern Michigan and northern Ohio. Another portion of the tribe fled to the French and the descendants of this group live at Lorette near Quebec. Today there are 783 in Oklahoma and 500 in Quebec.

21. IROQUOIS (Eár-o-kwoi). A French corruption of the Algonkin name "Irinakhōiw," meaning "real adders." A group of five tribes, Cayuga, Mohawk, Oneida, Onondaga and Seneca, to which the Tuscarora were later added, which occupied New York state and adjoining regions from about the 13th century until the break-up of the League of the Six Nations at the time of the American Revolution. The tribes are now found on five reservations in Quebec and Ontario, Canada; and on six reservations in New York, one in Pennsylvania, one in Oklahoma, and one in Wisconsin. The Canadian groups number about 11,550; those in New York and Pennsylvania about 4500; in Oklahoma 700; and in Wisconsin 3250, a total of about 20,000. Further details of tribal distribution will be discussed in a future leaflet.

22. NEUTRAL. So called by the French because the group was neutral in wars between the Iroquois and Huron. The Hurons called them "Attiwandaronk," "they are those whose language is awry." There appears to be no native name for the confederation as a whole. The group was broken up by the Iroquois in 1650-51 and the survivors assimilated into neighboring tribes. Nothing is mentioned about the confederation after the mid-17th century, and nothing certain is known today about any descendants. Some of the so-called Seneca of Oklahoma are said to be of Neutral ancestry.

23. WYANDOT (Wy-an-dot). See section 20.

24. STOCKBRIDGE. The Algonkin Indians called by this name, while not originally inhabitants of the Great Lakes region, are included here because they have lived on a reservation in Wisconsin since 1856. The tribe, of which the native name is "Mahican," formerly lived in the valley of the Housatonic river in Massachusetts. The name "Stockbridge" came from a nearby White village. In 1785 the tribe began a series of western movements which eventually brought it to its present location. The Munsee Delaware joined it in 1833. The combined groups today number about 600.

Compiled from the following sources by F. H. Douglas:

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INDIANA HISTORICAL SOCIETY

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TRIBAL NAMES: PART I



LEAFLET 82
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1. INTRODUCTORY. The names by which most Indian tribes are commonly known today are not usually those applied by the tribes to themselves. The names given to them are from various sources, the main ones being the following: corruptions of native names by French, Spanish and Americans; nicknames applied by one tribe to another; corruptions of these in non-Indian languages; translations into English, often incorrect, of native names and nicknames; names in non-Indian languages which have no connection with the native name. The tribes do not use these names themselves except in dealing with Whites. The native name is usually the word for "people," "men," or the like.

2. ACCURATE INFORMATION about these matters is difficult to obtain. Many of the books which discuss them were written before the study of native languages had advanced as far as it has now, with resulting mistakes about names. The information given in this leaflet has in many cases been obtained from modern authorities on the various language groups. Thanks are due to these authorities for their assistance.

3. PLAN OF THE LEAFLET. This is the first of several numbers of this series devoted to tribal names. In each the names are divided by geographic areas. This number has to do with some of the tribes which are best known to the public.

NORTHWEST

4. KLIKITAT (Klíh-kih-tat). A corruption of the native name of a village of the tribe, "Khlah-tee-khat," of which the meaning is unknown. The native name for the group is approximated by "hwalth-hwy-pam," meaning "klikitat speaking people."

5. NEZ PERCÉ (Nay Pair-say, French pronunciation; Nez Purse, or Pursay, American pronunciation). The French name for the tribe, meaning "pierced nose" and referring to the old tribal custom of piercing the septum of the nose to receive a shell ornament. The native name is "Nu-mée-pu," meaning "people of numi."

6. SIWASH (Sy-wash). This is one of the most misused and misunderstood words applied to Indians. It is not an Indian word, but a corruption of the French "sauvage" (so-vahj), meaning "savage." It was not and is not applied to any single tribe. The early French in the Northwest called all Indians "sauvages," "savages." In the Northwest, especially in the Columbia drainage, there developed around 1800 a simplified trade language, called the Chinook jargon. It was made up of words taken from a number of Indian and non-Indian languages. In this jargon "siwash" was the word for "Indian" as distinguished from "White man." Only in this sense and in this language is the word correctly used. There is no Siwash tribe and there never has been.

7. UMATILLA (You-ma-tíl-la). A corruption of the native name for one of the villages of this tribe, "Ee-ma-tih-luhm," meaning "lots of rocks." There appears to be no native name for the whole tribe.

8. WALLA WALLA (Wáh-lah Wáh-lah). A corruption of the native name "Wa-la-wa-la-pu," meaning "people of the little river." Walula is another version of the common name.

9. WENATCHI (We-ná-tchee). A corruption of the name applied to this Salishan tribe by Indians speaking Sahaptin languages. This name is "Wih-náh-shuh" and means "waters (large stream) flow out." The tribe's own name for itself is "N-sp-k-wáh-us." Its meaning is unknown, though it may have the connotation of "our people."

10. YAKIMA (Yáh-kih-ma). A corruption of "Yáh-kuh-muh," meaning "pregnant ones." This is the native name.

PLAINS

11. ARAPAHO (Ah-rá-pah-ho). A nickname for this Algonkin tribe in the Siouan language of the Crow tribe, meaning "tattooed on the breast people," or "many tattoos." The Crow word is accented on the last syllable. The native name is written in several ways, "I-nu-na-i-na" (Ee-noo-nah-ee-na) and "Hi-na-nae-inan" being two of these spellings. This name appears to mean "our people."

12. BLACKFOOT. A translation of the native name "Sik-si-ka," referring either to the fact that the tribe painted moccasins black or to the discoloring of their moccasins by the ashes of grass fires.

13. CHEYENNE (Shy-en). This name is a French corruption of the Yankton Sioux nickname for the tribe, "Sha-hée-yay-na," which means "those who speak a different or strange language." The word may also have something to do with "red," referring either to a Cheyenne use of red paint or to the fact that the Sioux are said to have called a foreign tongue a "red" language. There is no connection with the French "chien," meaning "dog." The native name is "Dzi-tsis-tas" (Dzee-tsís-tas) or "Tsis-tsís-tas," according to different spellings. It appears to mean "people," but might mean "cut or gashed people."

14. COMANCHE (Ko-mán-tchee). The Spanish or Mexican name for the tribe since at least the 18th century. Its meaning is not known. The native name is "Nu-ma," or "Num," meaning "people."

15. CROW. An American translation of an incorrect French translation of the native name "Ap-sá-ro-ke." This word refers to a kind of fork-tailed bird which is not now identifiable, the Indians saying that it is no longer found in their country. The early French mistakenly identified this bird with the crow and called the tribe "Gens du corbeau," "Crow people."

16. SIOUX (Soo). An American corruption of part of a French corruption of the Ojibwa name for the tribe. The Ojibwa called the Sioux "Na-do-wés-si-weg;" a diminutive plural derived from "na-do-we" (nah-do-way) and meaning "snake," and, by metaphor, "enemy." The French changed this name to "Na-do-wes-si-oux" (Na-do-wes-see-oo). In the early 19th century the Americans took the two last syllables of the French name, "si-oux" (see-oo), and pronounce it "Soo." The tribal name is "Dakota," "Lakota," or "Nakota," depending on the dialect used. This name means "allies."

SOUTHEAST

17. CHEROKEE (Cháir-o-kee). This name is most probably a corruption of the Creek word "Tci-lo-ki" or "Chi-lo-ki," meaning "people of different speech." The native names are two: "A-nee-yung-wee-yah," "real people" or "A-nee-ki-tu-haw-gi," "people of Kituhwa," (an important ancient town).

18. CHICKASAW (Chíck-a-saw). A native word of unknown meaning. The ending indicates that the word is a place name.

19. CHOCTAW (Tchók-taw). The origin and meaning of the word are unknown.

20. CREEK. The tribe now called by this name formerly lived on what is now called the Ocmulgee river. The 17th century name for this stream was Ochesee Creek, "O-che-see" probably being a Hitchiti word meaning "people of a different speech." The English colonists called the tribe "Creek" because

it lived on Ochese Creek. The native name is "Mus-kó-gee" of which the origin and meaning are unknown. (The final syllable is not "jee.")

21. MUSKOGEE. See Section 20.

22. SEMINOLE (Séh-mih-nole). The name is derived from the Creek word "si-ma-no-le," meaning "separatist" and referring to the separation from the Creek tribe of a band which fled to Florida in the 18th century.

SOUTHWEST

23. HOPI (Hó-pee). A contraction of the native name "Ho-pi-tu," meaning "peaceful people." The name "Mo-ki" or "Mo-qui," once often applied to this tribe, is a Navaho nickname meaning "monkey." It is much disliked by the Hopi and is little used today.

24. MOKI or MOQUI. See section 23.

25. NAVAHO (Ná-va-ho). Apparently a corruption of the Tewa (Tay-wa) Indian name for a ruined pueblo in the upper Rio Grande Valley in northern New Mexico. This name is "Na-va-hu" and means "place of great planted fields." The first members of the tribe mentioned by the Spanish lived in this vicinity and were called by them "Apaches de Navahu." "Navahu" became changed to "Navajo" by the Spanish, "j" being the Spanish letter used to denote the sound we indicate by "h." Since we use the English alphabet and not the Spanish, there seems to be no reason to keep the spelling of this name with "j." The native name is "Din-néh," meaning "people" or "men."

26. PAPAGO (Pá-pa-go). A corruption of the Pima name for the tribe, "Pá-pa-vee aw-aw-tam," meaning "bean people." The native name is "Toch-ó-no o-o-tam," meaning "desert people."

27. PIMA (Pée-mah). A corruption of the native expression "pee-match," meaning "I don't know." The native name is "Ah-kee-mult aw-aw-tam," meaning "river people."

28. PUEBLO (Pwáy-blo, Spanish pronunciation; Pwéb-lo, American pronunciation). A Spanish word meaning "town." The Spanish explorers of the Southwest found certain Indians living in towns and called these towns "pueblos." The word came to be applied to the Indians who lived in these towns. There is no single Pueblo tribe. The 44 villages of this type are occupied by groups of Indians belonging to four linguistic families; Kéresan, Tanoan, Zunian, and Shoshonean. Not only do the Pueblo villages differ in languages, but also in customs and beliefs.

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THE MAIN DIVISIONS OF CALIFORNIA INDIAN BASKETRY

LEAFLETS 83-84

DECEMBER, 1937

Reprinted July 1967

1. INTRODUCTORY. Basketry is the art which has been most developed by the California Indians. All of the dozens of tribes in the state have made baskets, each in its own special style. The number and variety of these basket types are bewildering to the student or collector. In order to help clarify the situation this leaflet attempts to indicate the various major groupings into which all California basketry falls. Only the most broad outline can be given, for space does not permit a description of fine technical points, the reasons for differences between the types, and the various exceptions to the general statements made here. In later leaflets in this series the individual types will be discussed in more detail.

It should be clearly understood that the boundaries between the areas listed are only approximations. The basket types of tribes near area boundaries often shade into one another.

2. MATERIALS. The vegetal materials most commonly used in basketry in the various areas will be listed in the regional sections to follow. The Latin names are listed at the end of the leaflet. See reference 8 for full details.

3. DIRECTION OF COIL is often helpful in the identification of baskets. Coils are customarily described as moving clockwise or counter-clockwise. To save space, clockwise moving coils will be called right coils in this leaflet and those moving counter-clockwise, left coils. The wefts in twining also move spirally, though it is not easy to see. Direction of coil is always indicated as seen on the upper or inner side.

4. FINE BASKETRY alone will be discussed, the many types of coarse utility wares being left for a future leaflet.

5. MAJOR TECHNICAL DIVISIONS. In the northern fifth of the state—somewhat less to the east—all basketry is made in twined technics. South of this sector is a rather narrow band across the state in which both twining and coiling are practised as fine arts. All of the rest of the state is held by tribes who make their best basketry by coiling. This southern area may also be roughly divided into northern and southern sections. In the northern third rods are used inside the coils, while grass stems replace rods in the southern part.

The state may also be divided on the basis of design arrangement. In the northern half the designs are prevailingly diagonal or zigzag arrangements. In the southern half they are mostly horizontal, though both diagonals and verticals are used.

6. TWINED BASKETRY resembles cloth in having vertical warps, or foundation elements, bound together with horizontal wefts, or binding elements. Twined basketry is, of course, much more stiff and coarse than cloth; and, if true twining, is made by running two wefts at a time in the manufacture, whereas cloth has only one. It can most easily be distinguished by the presence of vertical or diagonal corrugations in the fabric (A-E,L,S). For further details see Leaflet 67, sections 11-17.

7. COILED BASKETRY has a continuous coil which begins at the center of the bottom and rises to the rim. The coil is the warp, or foundation, of the basket, and successive circles of it are simply wrapped or lashed together, usually by sewing with a flexible weft. This coil and the presence of horizontal corrugations in the fabric are the easiest means of distinguishing the technic (F-K,M-R,T-V). For further details see Leaflet 67, sections 4-10.

8. NORTHWEST TWINING (A-C). In this area basketry is of two types: that with a glossy yellowish-white background and patterns in red, black or both, with an occasional use of yellow (A); and that with a brown background with yellowish-white designs (C). Plain twining is the technic used in both cases. The wefts move to the left. Women's caps, dance and storage baskets, and baskets for trinkets (A) or the tourist make up the first type. The second covers bowls for cooking and serving food (C), hoppers for mortars, trays and burden and storage baskets. The white surface and the designs are applied by half-twist overlay and do not show on the inside (B). This is the chief identifying feature of such basketry. For a description of half-twist overlay see Leaflet 68, section 3.

The designs are largely made up of small triangles and somewhat larger rhomboids combined in repeated but disconnected units, or in bands moving in zigzags. On hemispherical shapes these bands are usually horizontal, but on trays or deep shapes a diagonal line prevails.

The preferred material for warps is hazel. Yurok baskets nearly all have hazel twig warps. Willow is used mostly by the Karok. Myrtle has some use among the Karok only. For wefts the roots of yellow pine, redwood, and spruce are the most common sources. Willow is a frequent substitute, and grape a less common one. The white overlay is white or bear grass. Maiden-hair fern stems provide the black overlay, and the stems of giant fern, dyed with alder bark, provide the red overlay. Oregon grape sometimes is the red dye. Both white overlay and the porcupine quills sometimes used for overlay may be dyed yellow with wolf moss.

The tribes making this basketry are: Hupa, Karok, Yurok, Tolowa, Chilula, Whilkut, Chimariko, Mattole, Nongatl, Lassik, Sinkyone and Wailaki.

9. NORTHEAST TWINING (D-E). The basketry of this area is like that described in the preceding section with the following important exceptions. The chief difference is that the white surface and the designs are applied by full-twist overlay twining (see Leaflet 68, section 4) so that they appear both inside (E) and outside (D). This is the chief factor in identification. The second difference is that all of the basketry shows the white surface. The work is less smooth and fine than that of the northwestern section and there are certain variations in shape. A common design in this area is made up of several parallel lines rising in terraces (D-E). The wefts move to the left. The materials of this region are those described in section 8.

The tribes making this basketry are the Pit River bands, especially the Achomawi and Atsugewi, the Shasta, and the northern Maidu, Wintun (Wintu) and Yana. Several small and now extinct tribes also made it.

10. POMO TWINING (L, S). The Pomo, a people living some distance north of San Francisco, are the most versatile of the California basket-making tribes. They have both the twining of the north and the coiling of the south, a number of variations of each type being used. Pomo twining is either plain (S), diagonal (L) or lattice. The common color is a medium tan with designs in red or black, but never both on the same basket. The chief design elements are the triangle and rhomboid, small rectangular elements and single zigzag lines. The designs are mostly simple zigzags in horizontal bands or bold diagonals made up of larger elements.

Of the thirty vegetal substances which may be found in Pomo basketry the following are most commonly used in twining. For the warp, willow stems are preferred, with hazel in second place. For the weft, the light tan background is provided by sedge root and digger pine root. The black weft is bulrush root or bracken fern root. The red weft is redbud bark.

The most common shapes are semi-globular forms (L), bell-shaped carrying baskets and shallow trays (S). The work is smooth and well shaped, and extraordinarily fine in the best examples. The wefts move to the left.

11. POMO COILING (F-J) is done on either a one-rod (H, J), or a three-rod (F, G, I) foundation. One-rod work has separated stitches; three-rod work has close-set stitches. The background is a light to medium tan with black designs. These baskets may be decorated with feathers (I), beads (F-H) or both (G, I). The chief shapes are more or less deep truncated cones, shallow forms with incurving rims (F, J), and ellipsoid forms, long and narrow with mouths much smaller than their bases (H). The work is very smooth and fine. Right coiling is the rule.

The warp or foundation rods are willow or hazel twigs. Sewing is done with sedge root for the light tan and bulrush root for the black.

The basketry of neighboring tribes, the Huchnom, Wappo, Lake and Coast Miwok and the Patwin (southern Wintun) shows Pomo influence. The basketry of the Yuki is coiled and has a superficial resemblance to Pomo work. But it has a number of peculiarities which set it in a class apart. It also somewhat resembles the work of the group treated in the next section.

12. NORTHWEST CENTRAL COILING (M, T, V). In this region basketry is prevailing on a three-rod foundation, though the Miwok also use one-rod. The two main producers of this type are the eastern Miwok and the southern Maidu. Both kinds of baskets have a light cream to medium tan background. But the designs of the Miwok are prevailing black and the Maidu strongly favor red for their patterns. Maidu design is marked by the presence of bold masses of rather large triangles (T) or rather wide parallel bands of horizontal zigzags. The Miwok favor more delicate designs (V). The lines of the zigzags are narrow and the arrangements of triangles much smaller and farther apart. They also have vertical designs. A large deep bowl with straight sides flaring out from a fairly large base is the most characteristic shape (T, V). More shallow bowls, trays, and a few semi-globular forms are

also made. Right coiling is the rule, except in flat trays which have left coiling. The work is regular, strong and rather coarse.

The Maidu use willow or redbud for the foundation rods and for the light sewing splints. The red sewing splints are redbud with the bark. Black sewing splints are the roots of the yellow pine, dyed by burying in mud and charcoal. Among the Miwok, willow rods are preferred for foundation, with sumac coming far behind. Light sewing splints are usually peeled redbud twigs, though sedge or slough grass root and the roots of both digger and yellow pines also were used. Bracken fern root is the common black, and redbud bark the red.

West of the Maidu and running over into Nevada are the Washo. Their basketry, made on both one-rod and three-rod foundations, has a strong general resemblance to that of their neighbors, especially the Miwok. Both red and black are used in the designs. In the best baskets, which have the three-rod foundation, the work is much finer and the stitches smaller and closer together. The older baskets are relatively coarse and are mostly deep bowls. The newer baskets have extraordinarily fine and regular stitching and a great perfection of shape. More or less globular forms appear most frequently in this group (M). Right coiling is used. The Washo designs are much like those of the Miwok. The one design which is peculiarly Washo is made up of tall slender triangles (M), either single, combined in pairs to form diamonds, or arranged in large units. All designs using this element have a sharp and delicate animation which is easily noted.

13. CENTRAL VALLEY COILING (N, Q). Basketry from this section has one characteristic which sets it off from the types so far described, the use of a bundle of grass stems inside the coil. The coil is quite flat. The stitching is rather open so that the stems can be seen. The ellipsoid shape of the stitches and their open spacing are important identifying features. The background is a rich medium to dark tan, with red and black designs, though sometimes the colors are used singly. There are three common shapes: deep bowls (Q), much like those of the Maidu but wider in relation to height; jar-like vessels with a flat, wide shoulder and a short neck; and perfectly flat trays. The jar is the so-called "bottle-neck" (N). The coiling is right in the bowls and trays, left in "bottle-necks." The most common designs are parallel horizontal bands with central diamonds (Q). Rows of stiff, angular human figures are also used, as are broad vertical bands and diagonal zigzags. The bottle-necks are likely to have black feathers or tufts of red wool around the outer edge of the shoulder (R). These baskets are made by the Yokuts, or Tulare, tribes.

The bundle foundation contains the stems of a grass. The tan sewing material is marsh grass root, the black is bracken fern root, and the red, redbud bark.

14. SOUTHEASTERN COILING (K, R, U). In an area beginning near the eastern border somewhat north of the center of the state and broadening

out to include all but the southwestern edge of the state live a number of tribes whose basketry is united by certain features. All use a grass stem coil, though rods are sometimes used. Designs are red and black on a light background, with close-set, narrow stitching. Coiling is to the right, except in "bottle-necks." Horizontal, vertical and diagonal design arrangements are used. The most typical form is a deep bowl with slightly curving sides flaring boldly up from a small base (K). The bowls of the northernmost tribe in this area, the Mono, are shaped a good deal like those of the neighboring Maidu and Tulare, with a quite large base and less boldly flaring sides. The form reaches its most characteristic development among the tribes in the center of the area, such as the Panamint and Kern River. "Bottle-necks" are also made, but lack the sharp shoulders of the Tulare form (R). The shoulder becomes more and more rounded toward the South. Mono "bottle-necks" and globular forms (U) tend to be much wider than high. The designs are of the Tulare type. A thick hour-glass is much used as a design unit by the Panamint.

The basketry most typical of this area has grass stems in the foundation and splints of the willow for the white color. In the north of the area the red and black are redbud bark and bracken fern root respectively. The southern tribes use tree yucca root bark for the red and the seed pods of the devil's claw for the black.

This basketry is often confused with that from the Tulare area. But the differences between background colors and stitch character are clear guide posts. The southeastern baskets have a light background of long narrow stitches set closely together (K), while the Tulare types show a tan background of ellipsoid stitches somewhat widely spaced (Q).

The chief basket-making tribes in this area are the Panamint or Koso, the Kern River or Tubatulabal, the Mono and the Kawaiisu.

15. SOUTHWESTERN COILING (O, P). The baskets from the southwestern corner of the state have a coil made up of grass stems sewed with the stem of a rush, the color of which is the best identifying feature of the type. This coil is large and round, differing from the rather thin and flat coils made elsewhere with a grass foundation. The rush stems vary in color in their length from yellow to brown. This color range creates an irregularly mottled background which is the distinguishing feature of this basketry. Another feature is the glossiness of the surface. Designs are black, and are arrangements of geometric elements, often, but not necessarily, asymmetric (O); and rather realistic life forms, chiefly rattlesnakes, eagles and turtles (P). Small, somewhat globular bowls (O) and flat trays with low straight walls (P) are the common shapes. Flat or open forms coil to the right, globular forms to the left.

The foundation bundle is of grass stems. The white sewing material is sumac. The mottled brown-yellow sewing material is from the stem of the rush. The black designs are sumac dyed with sea blight.

This description applies to the recent, more or less commercial basketry. The older baskets are made of the same materials but are much coarser and have very simple designs, if any. Shallow and deep bowls are the common shapes. The walls are quite flexible.

The basket-making tribes in this area are the various groups of Mission Indians, the Cahuilla or Kawia, the Serrano, and the Chumash. Chumash basketry, now excessively rare, differs slightly in having three rushes in the coil.

16. SOUTHERN COAST. South of San Francisco lived various tribes called today by the general name Costanoan. They have so completely vanished that nothing is known about their basketry. South of them, down almost as far as Santa Barbara, lived the Salinan groups. Their culture has been enough preserved to indicate that their basketry was of the Yokuts type (see Section 13).

17. KLAMATH, PAIUTE AND CHEMEHUEVI. The Paiute are not considered in this leaflet because culturally they do not belong to California, even though some of them are within its boundaries. While the range of the Klamath includes part of California, they are primarily a tribe of Oregon, and for this reason are omitted here. Chemehuevi basketry is more southwestern than Californian.

18. LATIN NAMES OF MATERIALS:

| | |
|-----------------|--|
| Alder | <i>Alnus rhombifolia</i> |
| Bear grass | <i>Xerophyllum tenax</i> |
| Bracken fern | <i>Pteridium aquilinum</i> |
| Bulrush | <i>Scirpus maritimus</i> |
| Devil's claw | <i>Martynia</i> |
| Digger pine | <i>Pinus sabiniana</i> |
| Giant fern | <i>Woodwardia radicans</i> |
| Grape | <i>Vitis californica</i> |
| Grass | <i>Epicampes rigens</i> |
| Hazel | <i>Corylus californica</i> |
| Maidenhair fern | <i>Adiantum pedatum</i> |
| Marsh grass | <i>Cladium mariscus</i> |
| Myrtle | <i>Myrtus communis</i> |
| Oregon grape | <i>Berberis nervosa</i> |
| Redbud | <i>Cercis occidentalis</i> |
| Redwood | <i>Sequoia sempervirens</i> |
| Rush | <i>Juncus</i> |
| Sea blight | <i>Sueda</i> |
| Sedge | <i>Carex barbarae</i> |
| Spruce | <i>Picea sitchensis</i> |
| Sumac | <i>Rhus trilobata</i> |
| Tree yucca | <i>Yucca arborescens or brevifolia</i> |
| White grass | <i>Xerophyllum tenax</i> |
| Willow | <i>Salix</i> |
| Wolf moss | <i>Evernia vulpina</i> |
| Yellow pine | <i>Pinus ponderosa</i> |

Compiled from the following sources by F. H. Douglas:

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DENVER ART MUSEUM

1300 LOGAN STREET, DENVER, COLORADO

DEPARTMENT OF INDIAN ART

RICHARD G. CONN, CURATOR

TRIBAL NAMES: PART 2

LEAFLET 85

DECEMBER, 1939

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1. INTRODUCTORY. The names by which most Indian tribes are commonly known today are not usually those applied by the tribes to themselves. The names given to them come from various sources, of which the main ones are the following: corruptions of native names by French, Spanish and Americans; nicknames applied by one tribe to another; corruptions of these in non-Indian languages; translations into English, often incorrect, of native names and nicknames; names in non-Indian languages which have no connection with the native name. The tribes do not use these common names themselves except in dealing with the Whites. The native name is usually the word for "people," "men," or the like.

2. ACCURATE INFORMATION about these matters is difficult to obtain. Many of the books which discuss them were written before the study of native languages had advanced as far as it has now, with numerous resulting mistakes about the origins and meanings of tribal names. In several cases the information given in this leaflet has been obtained from modern authorities on the various language groups. Thanks are due to them for their assistance.

3. PLAN OF THE LEAFLET. This is the second of several numbers in this series which are to be devoted to tribal names. In each the names are divided according to main geographical areas.

PLAINS

4. ARIKARA (Ah-ríh-kah-rah). There is some disagreement about this name. Reference 5, the latest and a purely linguistic one, states that the name is quite possibly that used by the tribe for itself. It means "elk." References 4 and 13 state that the name is that applied to the tribe by their neighbors the Mandan; and that the tribe's own name is "Sah-nish," meaning "people." The nickname Ree was often applied to the tribe. It is an abbreviation of Arikaree, a misspelling of Arikara.

5. GROS VENTRES (Grow Vawntr). This name is a source of much confusion because it has been applied to two entirely distinct tribes, the Atsina and the Hidatsa. By scientists it is applied to the Atsina; and by the United States Indian Office to the Hidatsa. In this leaflet it is being considered in relation to the Atsina.

The name is a French nickname and means "Big Belly." It does not refer to the anatomy of the Indians but to the fact that they lived on the river of that name. The word "Atsina" (Aht-sée-nah) is the Blackfoot name for the tribe, being a translation of the French name—or perhaps it is the other way (?). The tribe's own name for itself is A-a-nin-en-a (Ah-ah-neen-ayn-ah), meaning either "White clay people" or "Mounds to turn running buffalo." To distinguish them from the Hidatsa this tribe was sometimes called Gros Ventres of the Prairies, or Fall Indians. For the name Gros Ventres in relation to the Hidatsa see section 6 of this leaflet.

6. HIDATSA (Hih-dát-sah). This name appears to be a corruption by themselves of the Hidatsa name for one of their villages on the Knife River, Midahatsiatiush (Mee-dah-hat-see-ah-tee-ush), meaning "Willow Village." They formerly called themselves Midhokats (Meed-ho-kats). Two other names have commonly been applied to them, Minitari, and Gros Ventres of the Missouri. Minitari (Mee-nee-táh-ree) is a corruption of the Mandan name for them, Minitahdi (Mee-nee-tah-dee), meaning "cross the water." For Gros Ventres see the discussion in section 5 of this leaflet.

7. MANDAN (Man-dan). This name appears to be a corruption of the Sioux name for the tribe, Matani (Mah-táh-nee) or Mawatani (Mah-wah-táh-nee).

Long ago the tribe called itself Numakaki (Noo-mah-kah-kee), meaning "people." Later the name Nuneta (Noo-ne-tah), also meaning "we, people, ourselves" came to be used.

8. OMAHA (Ó-mah-hah). A corruption of the native name "Oo-mon-hon" (with the "n" nasalized as in French), meaning "against the current, that is, upstream." The name refers to a migration of the tribe up the Mississippi after a split with the related Quapaw who went downstream.

9. OSAGE (Ó-sayj). The American pronunciation of the French corruption of the native name for the tribe, "Wah-zha-zhe," of which the meaning is unknown.

10. PAWNEE (Paw-nee). According to the most recent linguistic investigations this name appears to be an American corruption of the native word "Pah-ree-soo," meaning "a hunter." In the Pawnee language the letters "r" and "n" are very hard to distinguish in speech. Hence the word was thought to be "Pah-nee-soo." The people we call the Pawnee did not think of themselves as a tribe, but as a group of four related tribes. Hence there is no native name for the whole body of associated peoples.

11. QUAPAW (Kwáw-paw). A corruption of the native name "Oo-gach-pah," meaning "with the current, that is, downstream." See section 8 of this leaflet for further information.

NORTHEAST

12. CHIPPEWA (Tchíp-pe-way). See section 17 of this leaflet.

13. DELAWARE (Déh-lah-ware). The tribe, river and state of this name were all named for Thomas West, Lord de la Warre, an early colonial governor of Virginia. The tribe in question lived along the central section of the river and was given its name by the English. The native name is "Leni-Lenape" (Láy-nee Lay-náh-pee), meaning "real men." Sometimes they were called "Lenape" only.

14. FOX. A translation of the native name for one clan of the tribe, Wagoagi (Wah-go-ah-gee). The native name for the whole tribe is Meshkwakiagi (Meshk-wah-kee-ah-gee), meaning "Red Earths." The name "Outagami" (Oo-tah-gah-mee) was sometimes used. It is a corruption of the Ojibwa name for the tribe "Utagamig" (Oo-tah-gah-mig), meaning "they of the other shore."

15. HURON (Héw-ron). A French word meaning "bristled, or rough haired." The native name was Wendat (Wen-dat), meaning possibly "the islanders" or "dwellers on a peninsula." The modern survivors of the tribe are called Wyandot (Wy-an-dot), a corruption of Wendat.

16. MENOMINI (Men-áh-mih-nee). This name is a corruption of the tribe's own name for itself, Manomanewuk (Mah-no-mah-ne-wuk), meaning "wild rice men."

17. OJIBWA (O-jíb-way). A corruption of an expression in the tribe's own language, "o-jib-i-weg," meaning "those who make pictographs." "Ojibiweg" is in turn derived from "nind-o-jib-i-wa," meaning "I mark or write on some object." An earlier explanation of the name, now considered incorrect, derived the name from "o-jib-ub-way," meaning "to roast till puckered up," referring to the tribal style of moccasins which has a puckered seam on the instep. Chippewa is another way of spelling Ojibwa and refers to the same tribe. The native name is anicinabe (ah-nee-cih-nah-be), "first man."

18. SAUK (Sawk). There is some uncertainty here, but the name is most probably a corruption of the native name "Asagiwa" (Ah-sah-ge-wah), meaning

“those who came forth.” Sac is another corruption of the native name and is the official U. S. Indian Service spelling.

19. WINNEBAGO (Win-ne-báy-go). A corruption of the Ojibwa nickname, in their Algonkin language, for this Siouan tribe. The native name is “Hochtang-ga-rah,” meaning “big fish people.”

SOUTHWEST

20. APACHE (Ah-pah-tchee). A Spanish corruption of the name for the tribe in the language of Zuni pueblo, “Apachu” (Ah-pah-choo), meaning “enemy.” This explanation is not absolutely proven, but is both possible and probable. The various Apache bands call themselves by variations of “Dine” (Din-neh), meaning “people.”

21. HAVASUPAI (Hah-vah-sóo-pie). A corruption of the tribe’s own name for itself, Havasuwaipaa (Hah-vah-soo-wy-pah-ah), which means “blue green water people.” The native name is sometimes further shortened to Supai. The tribe is also sometimes referred to by the name given it by the neighboring Hopi, Coconino (Ko-ko-née-no).

22. WALAPAI (Wáh-lah-pie). A corruption of the native name, Hawálya-paya (Hah-wah-le-ah-pah-yah), which means “pine people.” The name is sometimes spelled Hualapai, pronounced like Walapai.

23. MOHAVE (Mo-háh-ve). A corruption of the native name Hamakhava (Hah-mak-hah-vah), of which the meaning is unknown. The early Spanish sometimes spelled the word Jamajab (Hah-mah-hav).

24. YUMA (Yóu-mah). This name appears to be a corruption of the name given the tribe by the Pima, “Ium” (youm), of which the meaning is unknown. But the name may have been introduced by the Spanish, who were using it in the 17th century. The tribe’s own name is Kwitchiana (Kwih-tchee-ah-nah), of unknown meaning.

Compiled by F. H. Douglas from the following sources:

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1. A Yuma account of origins—J. P. Harrington. Vol. 21, 1908

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2. Ethnography of the Yuma Indians—C. Daryll Forde. Publications in American Ethnology and Archeology, Vol. 28, no. 4, 1931

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3. Apsaroke and Hidatsa—Edward S. Curtis. Vol. 4, 1909
4. Mandan, Arikara and Atsina—Edward S. Curtis. Vol. 5, 1909

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5. Composition of the Caddoan linguistic stock—A. Lesser & G. Weltfish. Miscellaneous Collections, Vol. 87, no. 6, 1932
6. Article on the meaning of “Ojibwa”—Truman Michelson. Miscellaneous Collections, Vol. 78, no. 1, 1927

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8. Handbook of American Indians—F. W. Hodge, editor. Bulletin 30, 1907-1910
9. The Omaha tribe—A. C. Fletcher & Francis La Fleche. 27th Annual Report for 1905-06, 1911
10. Correspondence with the late Dr. Truman Michelson, 1937
11. The Winnebago tribe—Paul Radin. 37th Annual Report for 1915-16, 1923

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12. Review of Skinner’s “Sauk Ethnology”—Truman Michelson. Vol. 26, no. 1, p. 95, 1924

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13. The Arikara Book of Genesis—Melvin R. Gilmore. Vol. 12, 1930

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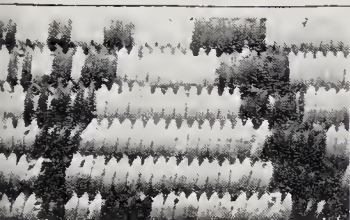
14. Correspondence with Dr. Ruth Benedict, 1938

DENVER ART MUSEUM

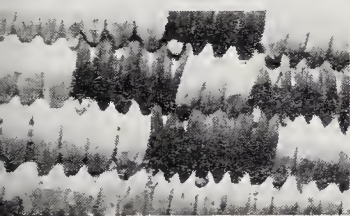
1300 LOGAN STREET, DENVER, COLORADO

DEPARTMENT OF INDIAN ART

NORMAN FEDER - Curator



A
Pima-Papago
coiled basketry



C
Modern Papago
coiled basketry



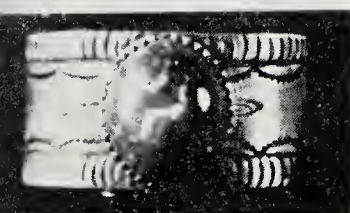
E
"Lazy line" in
Navaho weaving



G
Central seam
in Chimayo
weaving

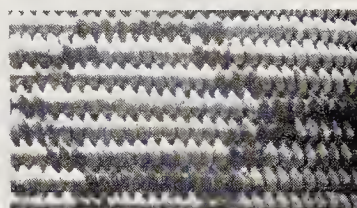


I
Chimayo
Blanket edge
finish. —
Navaho-Pueblo



K
Navaho type
silver

B
Western Apache
coiled basketry



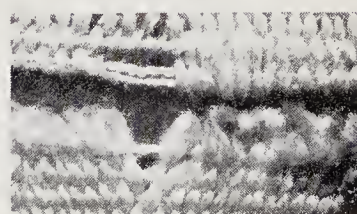
D
Pima-Papago
Cross-section of
coiled basketry
Western Apache



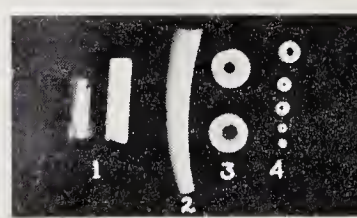
F
Ridge formed by
multiple warps
in Chimayo
weaving



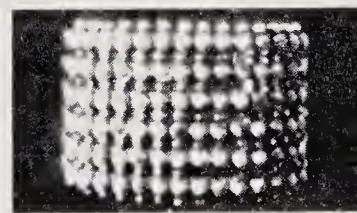
H
Chimayo
Blanket edge
warps —
Navaho-Pueblo



J
Indian bead types
1. Wampum
2. Dentalium
3. Shell disk
4. Glass



L
Zuñi type
silver



Notes On Distinguishing Similar Objects, Part 1

LEAFLET 86

DECEMBER, 1939

Reprinted July 1967

1. INTRODUCTORY. Among the crafts of the Indian there are a number of types which, though made by different tribes, have a superficial resemblance to each other in shape, color, design or material. Many collectors—and for that matter, museums—have some difficulty distinguishing these types, with the result that pieces are wrongly identified and labeled. In order to help out this situation it is proposed to issue, in this series, occasional leaflets which will point out the ways to distinguish some of these puzzling similarities.

2. PIMA-PAPAGO AND WESTERN APACHE BASKETRY. Both of these groups make light cream or tan coiled baskets with designs in black. Though the designs do not ordinarily resemble each other they may do so, at least superficially, so that this design difference is not always sufficient to make the distinction clear. This is only true of the old style Pima-Papago basketry in which the light material is split willow twigs, as is the case with the Western Apache. Nearly all modern *Papago* baskets have a whitish background made of bleached yucca leaf (C). Its whiteness and rather soft consistency are not found in the work of either the Pima or Western Apache.

The way to distinguish the older type of Pima-Papago basketry from that of the Western Apache is to note the character of the coils. The Western Apache coils (B) have three slender round rods inside them. These rods are arranged in a triangle so that when they are wrapped by the sewing material a nearly round shape is formed (D-1). The space between each pair of coils is rather deep, so that each coil stands out very noticeably, creating a very evident corrugated effect. On the other hand Pima-Papago basketry has a coil (A) filled with either split cattail leaves—most common among the Pima; or strands of bear grass—most common among the Papago. This bundle of material tends to form a rather flat oval form (D-2) when enclosed by the sewing material. Each coil being rather flat there is little depth between two coils. Hence the surface is rippled rather than sharply corrugated.

Thus a sharply corrugated surface made up of little round coils indicates Western Apache; while a rippled surface of rather flat wide coils means Pima-Papago.

It must be pointed out that Chemehuevi, Havasupai, Walapai and Yavapai basketry also have the corrugated surface. The points of difference between these and Western Apache will be indicated in a later issue of this series.

3. PUEBLO - NAVAHO - NEW MEXICO MEXICAN (CHIMAYO) WOOL BLANKETS. These three groups of weavers all make striped wool blankets which superficially resemble each other. But the means of telling them apart are simple and nearly infallible. These identifying factors are concerned solely with technic, the way the blankets are made; for all three may use identical wools, dyes and designs.

Pueblo blankets are made on an upright loom like that of the Navaho, which is generally familiar to everyone. As the Pueblo weaver inserts the weft, or filler, threads to build up the pattern he carries each weft all the way across the surface of the blanket. Hence there are no diagonal lines appearing irregularly on the face of the finished blanket.

The Navaho woman, on the other hand, is extremely likely to weave on a section of the blanket which she can reach without shifting her position. This means that she creates a finished section of uneven shape, with diagonal lines appearing irregularly on its edges. Having done all she can from one position she moves to another. As she weaves the new section she creates

diagonal places to fit against those made when weaving the first section. These diagonal lines do not disappear, but remain clearly visible on the finished surface (E). Though there may be exceptions, the Pueblo weaver does not create these diagonal lines, hence their presence almost inevitably indicates a Navaho origin. Owing to the mechanics of his loom the Mexican weaver cannot make these diagonals. A Navaho woman may weave in the Pueblo manner and thus create a blanket which can only—if at all—be distinguished from a Pueblo one by other factors which cannot be discussed here. But the statement made above applies to the enormous majority of blankets.

The New Mexico Mexican weaver uses an horizontal loom in which the warp is controlled by heddles operated by foot pedals. But the width of the Mexican blanket is limited by the rather narrow framework of the loom. Therefore to make a wide blanket the Mexican has to do one of two things: weave two strips and sew them together (G); or string two sets of warps one above the other and make the weft, as it is inserted, cross the face of the upper warp and returns to its starting place across the lower warp. This set-up really amounts to one set of warp threads which has been folded. Apparently to strengthen the fold the Mexican weaver doubles or triples the warps at the fold. These extra warps make a thick band running lengthwise through the center of the finished piece (F).

This means that any blankets which are in two pieces sewn together, or have a noticeable ridge down through the center, have been made by New Mexico Mexican weavers. The name Chimayo, taken from a village north of Santa Fe, is usually given to this type of weaving. Actually these blankets are made in many places in New Mexico. Chimayo blankets are not Indian.

There are two other features which set Chimayo blankets apart from those of the Pueblos or Navaho. Both deal with the edges of blankets. One, illustrated by H, is concerned with warps. The Mexican strings a pair of warps along each side of the blanket. The Indians use but one. The second deals with edge finish and is illustrated by I. Pueblo and Navaho blankets have heavy twisted cords on their edges. Mexican blankets do not have these edge cords.

Blankets with pairs of warps on the edges, no edge binding and either in two pieces or with a central ridge, Chimayo Mexican; blankets in one piece with single warps on the edges, twisted selvage cords and no diagonal lines on the surface, Pueblo; blankets like the Pueblo but with diagonal lines, Navaho.

The above discussion applies almost exclusively to blankets having patterns of narrow stripes as this is the type which is likely to be wrongly identified. But the technical features described are true of all blankets made by these three groups. No consideration has been given in this discussion to Old Mexico Mexican and Indian blankets.

4. NAVAHO AND ZUNI PUEBLO SILVER JEWELRY. Both the Navaho and the Zuni learned to make silver jewelry from Mexican silver-smiths some time not long after 1850. Since then the art has flourished among both. But two general lines of development have come into being, each Indian group using the same basic technical methods but creating its own ideas about decoration. The line between the two is very definitely not fixed, so that the distinctions to be pointed out merely indicate general trends and not fixed rules. Until someone makes a careful comparative study no definite statements can be made.

The main differences are these. The Zuni use turquoise settings very profusely and make relatively little use of designs stamped into the surface of the silver (L). The Zuni also tend to make more delicate pieces, some showing wire openwork and the like. Turquoise is most commonly used in rather small pieces, many of which will be set on a single piece of jewelry.

The Navaho, while they use much turquoise, prefer to use larger stones and rather few of them (K). One stone to a piece is the most common condition. The Navaho almost always use designs stamped into the surface with steel dies. The Navaho pieces are usually more massive and heavy, lacking delicate openwork and the like.

5. WAMPUM AND OTHER SHELL BEADS (J). Owing to a misconception the word "wampum" has come to be used for any kind of Indian shell bead, and even for commercial glass beads (J-4) used by Indians. Actually wampum is just one kind of Indian made shell bead and can be easily recognized. A real wampum bead is a cylinder, much longer than it is wide, and with a hole running through it the long way (J-1). All other Indian made beads are shaped like disks or wheels, with their thickness less than their diameter (J-3). Except for glass imitation wampum, the only bead which might be mistaken for wampum is that made from the dentalium or tusk shell (J-2). This little shell is more or less cylindrical, its length is much greater than its width and it is pierced from end to end. But, unlike wampum, it tapers from one end to the other and there is a slight curve from one end to the other. True wampum cylinders have the same diameter from end to end and are perfectly straight.

Text by F. H. Douglas. For comparative reading see the following:

WESTERN APACHE BASKETRY

1. Basketry of the San Carlos Apache—Helen H. Roberts. *Anthropological Papers*, Vol. 31, pt. 2, American Museum of Natural History, New York, 1929

PIMA-PAPAGO BASKETRY

2. Basketry of the Pima and Papago—Mary Lois Kissell. *Anthropological Papers*, Vol. 17, pt. 4, American Museum of Natural History, New York, 1916

NAVAHO WEAVING

3. Navaho Weaving—Charles Amsden. The Southwest Museum, Los Angeles, 1934
4. Navajo Shepherd and Weaver—Gladys Reichard. J. J. Augustin. 1936

PUEBLO WEAVING

5. Technique of the major Hopi crafts—M-R. F. Colton. *Museum Notes*, Vol. 3, no. 12, Museum of Northern Arizona, Flagstaff, 1931
6. Zuni weaving technique—Leslie Spier. *American Anthropologist*, Vol. 26, no. 1, 1924
7. Leaflets 18, 89, 90, 91, 92-93, 94-95, 96-97—F. H. Douglas. *Indian Leaflet Series*. Denver Art Museum. 1931-1940

MEXICAN WEAVING

8. Indian blankets and their makers—George Wharton James. A. C. McClurg and Co., Chicago, 1920. Chapter 21.

NAVAHO SILVERWORK

9. A brief history of Navajo silversmithing—Arthur Woodward. *Bulletin 14*, Museum of Northern Arizona, Flagstaff, 1938

ZUNI SILVERWORK

10. Zuni silversmithing—K. M. Chapman. *Indians At Work* for Sept. 15, 1936. U. S. Office of Indian Affairs, Washington

WAMPUM

11. Beads and beadwork of the American Indians—W. C. Orchard. *Contributions*, Vol. 11, Museum of the American Indian, New York, 1929

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Title III ESEA
NORMAN FEDER - Curator



INDIAN BASKETRY EAST OF THE ROCKIES

LEAFLET 87

DECEMBER, 1939

Reprinted July 1967

1. INTRODUCTORY. Indian arts and crafts are commonly associated by the public with the West, and it is true that for a long time most of the Indians who have produced various manufactures have been confined to the West. Nevertheless a very considerable number of crafts are carried on by Indians in the Middle West and the East. This leaflet is concerned with an outline of basketmaking east of the Rockies. For a general survey of Indian basketry see Leaflet 58. Leaflets 83-84 deal with California basketry; 88 and 99-100 with southwestern baskets; and 98 with those of Washington and Oregon. Leaflets 67 and 68 deal with technics.

PLAINS

2. COILED BASKETS (A) were made in limited quantities by a number of Plains tribes. There are references to such baskets from the Sioux, Cheyenne, Arapaho, Kiowa, Comanche, Mandan, Hidatsa, Arikara and Pawnee. The baskets are used in a gambling game involving the use of dice which are tossed in the basket.

The baskets are made in a one-rod or two-rod-vertical technic (see Leaflet 67), and are very crudely sewn. They are all shallow bowls from 6 to 10 inches in diameter and from 1 to 3 inches deep. The sides are generally flaring. Fig. 47 in Reference 1 shows the common shapes. The baskets are usually made with willow twigs, though cottonwood twigs, elm root and yucca leaves may be used. The baskets are undecorated. They are made by women.

3. PLAITED CARRYING BASKETS (B) are made by the Mandan, Hidatsa and Arikara of North Dakota. The type is southern in origin and was introduced to the upper Missouri tribes by the Arikara, a tribe of the southern Caddoan linguistic family which migrated to North Dakota long ago. The general shape and character of these baskets are indicated by B on the cover, though this specimen is unusually small. Two sets of U-shaped rods are bound together so as to form the four corners of the basket. Just below their tops they are united by another rod which forms the circular rim of the basket. This framework is covered with strips of bark woven in a diagonal, or twilled, plaited or checkerwork technic.

The foundation and rim rods are commonly willow, though ash or hickory may be used. The plaiting is done with two sets of elements, a black or dark reddish-brown set running vertically; and a light set running horizontally. The inner bark of the willow, *Salix*, is used for the dark elements and that of the box-elder, *Acer negundo*, for the light ones. The willow bark is naturally dark but may be blackened by soaking in mud.

These baskets all have elaborate checkerwork patterns of the type shown on the cover (B). They are used for carrying burdens on the back and are made by women. Reference 2 describes their making in detail.

GREAT LAKES AREA

4. PLAITED BASKETS (C, D) are made of wood splints, most commonly black ash, *Fraxinus nigra*. Small logs are hammered until the annual rings are loosened and can be peeled off. These are cut into thin splints of different but even widths and are plaited together. The technic produces an appearance like that of a common market basket. Sometimes the splints are plaited in a more elaborate way so as to produce round baskets with openwork sides (K), each opening having six sides. Women are the makers.

Basketry of this type is not overly common in the region, but is made by the Chippewa, Menomini, Winnebago, Fox and Potawatomi. Most of the baskets are not decorated. But stamped designs (L) "porcupine work" (M), and the use of some splints in solid color are found (see section 9).

5. WICKER BASKETS have been made by the Chippewa, and possibly neighboring tribes made them. They were made of willow and shaped like a half cantaloupe, with a bow handle arching over the length of the basket. T

shows the shape, though it is not from the Great Lakes. By gathering willow at different times of year a range of color was obtained which made possible the use of simple striped patterns.

6. COILED BASKETS of sweet grass (E), *Hierocloe odorata*, are the most characteristic products in basketry of the region. The sweet smelling grass stems, in rather large bundles, are sewn in coils with ordinary needle and coarse thread. The sewing threads are quite far apart. Such baskets may have bases or lids of birchbark. Sweet grass is also used on the rims of ash splint baskets.

7. TWINED BASKETRY is restricted in the East to the salt bottles (F) and tobacco baskets made of corn husk by the New York Iroquois.

NORTHEAST

8. PLAITED WOOD SPLINT BASKETRY (H, I, L, M) is the most common type in this region. The process of manufacture is that described in section 4. But in the Northeast there is more elaboration than around the Great Lakes. Splints of different widths are used to create varying surfaces. In New England and southeastern Canada all plaiting is plain, that is, over-one-under-one (H, L, M), though an occasional example in diagonal plaiting has been made. The New York Iroquois use diagonal plaiting (I) as well as plain. Shapes and sizes vary widely from little trinket baskets to large hampers; and from round to oblong and square shapes both deep and shallow. Many baskets have lids and some have handles.

9. DECORATION. The baskets of the Maine Passamaquoddy and Penobscot may be decorated by dyeing certain splints in solid color. D, C, L show the appearance of this technic. But those made by the Connecticut tribes, Mashpee, Mohegan, Nipmuck, Wampanoag and others; Algonkin groups in Quebec; the Iroquois and certain tribes now living in Oklahoma though formerly northeasterners, such as the Iroquois and Delaware, are very likely to be decorated with simple floral or geometric designs stamped or painted on the splints. Baskets H and L on the cover are examples.

About 1860 a new technic called "porcupine work" appeared. Certain splints are twisted at regular intervals to produce a series of outstanding points as shown by example M. This technic was most popular in the 60's and 70's but is not extinct. It is also used today by the Chippewa around the Great Lakes.

10. PLAITED STRAW BASKETS (J). Until about 60 years ago ordinary rye straw was plaited into baskets among the Wampanoag. The straw was split before use. Half of the strands were dyed purple, so that the baskets present the appearance of a checkerboard. Similar basketry was made among the Oklahoma Delaware and probably elsewhere in New England.

11. WICKER BASKETS (G) have been made in New England since about 1880. The warps are wood splints like those used in plaited basketry. The wefts are made of sweet grass stems, *Hierocloe odorata*, either in bundles, braided or twisted. Work of this kind is also done today in the Great Lakes region.

SOUTHEAST

12. PLAITED SPLIT CANE BASKETRY (R, S, U) was and still is the most common type produced by the southeastern tribes. All of these baskets are made from the split stems of the wild cane, *Arundinaria*. This material has a hard, glossy surface which makes identification easy. Complicated single and double diagonal plaiting technics are used, which, with the aid of color, produce a type of basketry with bold allover designs. There is a wide variety of shapes, some of which are shown on the cover. Basketry of this type is produced by the North Carolina Cherokee (R), the Choctaw of Oklahoma (U), Louisiana and Mississippi, and the Chitimacha of Louisiana (S). Formerly

it was made generally throughout the South. The Houma of Louisiana plait with the leaf of the palmetto, *Inodes palmetto*.

13. DYES. This is one of the few really colorful types of Indian basketry. Three colors are commonly used, red or reddish-orange, black and the natural pale greenish-yellow of the cane. The black comes from boiled black walnut root, *Wallia niger*, the red either from puccoon, *Sanguinaria Canadensis*, or a mixture of the barks of the Texas oak, *Quercus Texana*, and the black gum, *Nyssa aquatica*. Sometimes a yellow from dock, *Rumex crispus*, and a dark purple from the maple, *Acer*, are used. Aniline dyes are also employed. The use of color is most highly developed on Chitimacha basketry (S).

14. PLAITED WOOD SPLINT BASKETRY is made by the North Carolina Cherokee, the South Carolina Catawba and others in the general region from splints obtained from the white oak, *Quercus alba*, and the basket oak, *Quercus Michauxi*. Simple diagonal plaiting, over-two-under-two, is the rule. The splints are prepared as described in section 4. The oak splints are somewhat thicker than those of ash and have a characteristic rich brown color. No decoration is used. T is a common shape. Deep or shallow round or square forms are made.

The Oklahoma Creek of today make some basketry (N) with hickory splints, *Hicoria*. There are also certain older Creek baskets (O) made of wood splints with a tan background and black designs. But the materials have not been identified, though said to be hickory. The Louisiana Houma use splints of the cypress, *Taxodium distichum*.

15. WICKER BASKETRY (Q) is being made today by the Oklahoma Cherokee with the twigs of the honey-suckle, *Rhododendron*. A wide variety of shapes and sizes is made. These baskets are brilliantly colored with aniline dyes. These baskets do not look "Indian" and may be the result of white influence.

16. COILED BASKETRY (P) made with a complex technic involving looping and sewing, is made by the Houma Indians of Louisiana. The material is the leaf of the palmetto, *Inodes palmetto*. These baskets are almost white and bear no decoration.

Compiled by F. H. Douglas from the following sources and from the examination of many specimens:

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- 94-95:**13: 8 "are used" should follow "clouts"
- 99-100:**13:5 "bayonet" for "batonet"
- 99-100:**15:5 "it" for "in"

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DEPARTMENT OF INDIAN ART

WILLENA D. CARTWRIGHT, CURATOR

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Types of Southwestern Coiled Basketry

1. INTRODUCTORY. The Southwest, that is, Arizona and New Mexico, with adjoining parts of adjacent states, is one of the great basket-making areas of the United States. The basket-making situation is not quite as complex as in California; but is sufficiently so to cause confusion among collectors and students. This leaflet attempts to outline the types of coiled basketry made in the area. Leaflets 99-100 deal with twined, plaited and wicker basketry in the area.

2. COILED BASKETRY has a continuous coil which begins at the center of the bottom and rises to the rim. The coil is the warp, or foundation, of the basket, and successive circles of it are wrapped and fastened together by sewing with a flexible weft. This coil and the presence of horizontal corrugations in the fabric are the easiest means of distinguishing this technic.

3. THE BASIC DIVISION of coiled basketry rests on the character of the warp, or foundation material within the coil. There are three main types: bundle or multiple foundation, with a bunch of fine elements; triangular foundation, with three—or in one case five—large elements arranged in a triangle with the apex upward; and vertical foundation, with one to three large elements placed one atop the other. There are numerous subdivisions of each.

4. DIRECTION OF COIL. Coils turn either clockwise, to the right; or counter-clockwise, to the left. This is noted by looking at the bottom of the basket on the inside. In the Southwest shallow baskets have a counter-clockwise or left coil. Jars have a clockwise or right coil.

HOPI

5. VERY THICK COILS containing a multiple foundation, together with the use of rather brightly colored and elaborate designs make this basketry easily recognizable (A, B). The foundation consists of stems of the grass *Hilaria Jamesii*, or shredded leaves of the narrow leafed yucca, *Yucca angustifolia*. The sewing material is the split leaf of the same yucca. White, greens and yellows are obtained by bleaching the yucca in varying degrees. Red-brown and black are the other colors commonly used. The former is from *Thelesperma* and the latter from sun-flower seed. A perfectly flat tray is the standard oldtime shape (A), though deep shapes of various kinds are also made (B). The designs are conventionalized plants, clouds, living creatures; and various geometric figures. For details see Leaflet 17.

WESTERN APACHE, YAVAPAI, WALAPAI, HAVASUPAI, CHEMEHUEVI

6. 3-ROD TRIANGULAR FOUNDATION and the use of black designs on a light cream or tan background are the features uniting the basketry of these tribes. Willow twigs are commonly used for the foundation, though those of the cottonwood and squaw-bush may be used also. Split willow twigs are used in sewing, with occasional exceptions. The black material for the designs comes from the outer covering of the seed pod of the devil's claw, *Martynia*. The Yavapai, and perhaps sometimes the Apache, use a red from the inner bark of the root of the tree yucca, *Yucca arborescens* or *brevifolia*. Shallow bowls are common to all groups. The Yavapai and Apache make deep jar shapes and the Chemehuevi more or less globular shapes. The Jicarilla and Mescalero Apache make coiled water bottles.

The designs are largely made up of rather complex geometric elements which the Apache (E) and Yavapai supplement with angular figures of people and animals. The designs of the Apache tend to be complex and to move in

diagonals. Those of the Havasupai (D), Walapai and apparently the Yavapai are slightly less complex and favor the use of concentric circles of designs. Chemehuevi designs are the simplest of all (C), each piece usually having only a band or two of very simple figures. Space does not permit the discussion of other distinguishing factors. Leaflet 64 deals in more detail with Apache basketry. The photos on the cover give a general idea of the differences in design styles.

UTE, PAIUTE, JICARILLA APACHE

7. 3-ROD TRIANGULAR FOUNDATION is also used by this group, but in design style and materials there is no resemblance to the work of the group described in section 6. The Paiute group referred to here is that living just north of the Navaho reservation, in southeast Utah. The basketry of other Paiute groups will be considered in a future leaflet on the basketry of Utah, Nevada and states to the North. The Ute are those of Colorado.

Jicarilla basketry (F, H) is unique in the Southwest for its quite common use of 5 rods instead of 3 in the foundation. Even when only 3 are used this basketry has a stiff massive quality which is distinctive. Split twigs from the sumac, *Rhus*, are used in sewing. This wood has a characteristic shiny appearance. Jicarilla work may also be distinguished by its use of large brightly colored designs. Most of these colors are aniline, but older work shows soft, rather dark colors from native dyes. Rather deep bowls (H), often with handles, fish creels, and deep straight-sided shapes are made (F). The last often have flat lids. Wavy openwork rims and loop handles (H) on the rims are quite common.

The Ute and Paiute basketry referred to here is that made by these tribes for the Navaho. Only one type is made, the well known so-called Navaho "wedding basket." This basket is a shallow bowl (G), bearing the design shown on the cover, and is used in many Navaho ceremonies. It is made of sumac, *Rhus*. The specimen shown is much smaller than usual.

NAVAHO

8. A TRIANGULAR FOUNDATION is used (I, J). But it has two rods and a small bunch of softer material instead of three rods. The soft bunch is placed at the top of the triangle. The rods and sewing splints are made from sumac, *Rhus*, and the bundle is made of yucca leaf, *Yucca baccata*. This technic is of interest because it was that of the ancient Basket-makers and survives today only among the Navaho. Navaho basket-making is not dead, as is often said today, but it is dying out.

Only rather small shallow bowls are made. The most common design is that shown in H on the cover, the same design as is on Ute and Paiute pieces made for the Navaho. Other designs are simple crosses, rectangles, zigzags, etc.

MESCALERO APACHE

9. A VERTICAL FOUNDATION is used by this group (K). There are three variations: two rods and a bundle; three rods and a bundle; and a quite wide thin wood slat and a bundle. All of these produce the wide thin coil which is such a prominent characteristic of the type. This distinctive coil, together with the equally distinctive color scheme of Mescalero basketry, make it very easy to identify. This color scheme is due to the color variations which can be produced by the sewing material, the leaf of the narrow-leafed yucca,

Yucca brevifolia. Quite bright green, grey-green, yellow and creamy white can be produced by different degrees of bleaching. The root of the same plant produces a dark red-brown. These colors are arranged in varying combinations to produce large and simple geometric figures, such as that shown on the cover.

The shallow bowl (K) is the common shape. It often has a flat bottom with sides flaring up at an angle. Deep shapes are made but are rather scarce.

PIMA, PAPAGO, MARICOPA

10. A SMALL MULTIPLE FOUNDATION is used by these tribes (L, M, N, O). The work of all three is very similar in most cases, for all use the same sewing materials, colors and designs. The Pima (M, N) and Maricopa use split leaves of the cat-tail, *Typha angustifolia*, for the foundation. The Papago use the leaves of the bear grass, *Nolina crumpens*. This is not an absolute rule, but the general tendency, for both groups may use either material. In all but modern commercial Papago basketry the light sewing material is split stems of the willow, *Salix nigra*, and the black material is the outer covering of the seed pod of the devil's claw, *Martynia*. In the modern Papago work mentioned above the light sewing material is bleached yucca leaf. Sometimes the green unbleached leaf is used; and also a red from the root bark of the tree yucca, *Yucca arborescens*.

Shallow bowls of many sizes are the most common product (M, N), with deep jar shapes coming second. There is much commercial basketry in a great variety of fancy shapes. The old standard patterns are complex geometric figures of the type shown on the cover. Some conventionalized life forms have been used in recent decades.

Tribal differentiation is difficult to indicate. On the whole Papago baskets tend to be more flexible, deeper and to have more black (L). In this style the Maricopa make only one shape—not made by the others—which is distinctive, a large, flat bottomed, very deep, carrying basket.

All three groups also made a coarse coiled ware with the sewing elements very far apart, so that the foundation is clearly seen (O). Wheat straw, *Triticum vulgare*, is most commonly used in the foundation, and willow or mesquite bark, *Prosopis velutina*, for the sewing materials. The work of all three tribes is about identical, except that the Maricopa put scattered smears of pink paint on the surface (O).

YUMA, MOHAVE, COCOPA

11. VERY LITTLE BASKETRY was made by these tribes. It seems to be largely extinct today and there is very little information about it. The Yuma made coiled bowls apparently like those of the Pima-Papago group, except that two rods in a vertical position were used in the foundation. They also made coarse coiled rush baskets like those mentioned in the last paragraph of section 10. The Mohave made a few bowls of openwork coiling. The Yuma and Cocopa made very large extremely coarse storage baskets having the general appearance of a bird's nest. The Pima-Papago group made these also.

Compiled by F. H. Douglas from the following sources:

MUSEUM OF NORTHERN ARIZONA, FLAGSTAFF

1. Technique of the major Hopi crafts—M-R. F. Colton. Museum Notes, Vol. 3, no. 12, 1931

AMERICAN MUSEUM OF NATURAL HISTORY, NEW YORK

2. Basketry of the San Carlos Apache—Helen H. Roberts. Anthropological Papers, Vol. 31, pt. 2, 1929
3. Basketry of the Pima and Papago—Mary Lois Kissell. Anthropological Papers, Vol. 17, pt. 4, 1916
4. Havasupai ethnography—Leslie Spier. Anthropological Papers, Vol. 29, pt. 3, 1928

UNIVERSITY OF CALIFORNIA

5. Ethnography of the Yuma Indians—C. Daryll Forde. Publications in American Archeology and Ethnology, Vol. 28, no. 4, 1931
6. The Cocopa—E. W. Gifford. As above, Vol. 31, no. 5, 1933
7. Northeastern and western Yavapai—E. W. Gifford. As above, Vol. 34, no. 4, 1936

UNIVERSITY OF CHICAGO

8. Yuman tribes of the Gila River—Leslie Spier. 1933

AMERICAN ANTHROPOLOGICAL ASSOCIATION

9. Walapai ethnography—A. L. Kroeber, editor. Memoirs, Vol. 42, 1935

UNIVERSITY OF NEW MEXICO

10. Preliminary report on the 1937 excavations, B. C. 50-51—Clyde Kluckhohn and Paul Reiter, editors. Bulletin 345, 1939. Pages 105-130 contain an extensive review of southwestern coiled basketry by Harry Tschopik, Jr.

AMERICAN ANTHROPOLOGIST MAGAZINE

11. Prehistoric North American basketry techniques and modern distribution—Gene Weltfish, Vol. 32, no. 3, 1930
12. Problems in the study of ancient and modern basket-makers—Gene Weltfish. Vol. 34, no. 1, 1932
13. Taboo as a possible factor in the obsolescence of Navaho pottery and basketry—Harry Tschopik, Jr. Vol. 40, no. 2, 1938
14. Navaho basketry as made by Ute and Paiute—Omer C. Stewart, Vol. 40, no. 4, 1938.

BUREAU OF AMERICAN ETHNOLOGY

15. Handbook of the Indians of California—A. L. Kroeber. Bulletin 78, 1925. Chapter 50 deals with the Mohave.

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Only specimens with starred letters (A*) are from Acoma. The remaining specimen is from Jemez but illustrates in general an Acoma type.

Acoma Pueblo Weaving and Embroidery

1. ACOMA (Ah'-ko-mah) is a town of the Keres group of pueblos located in west central New Mexico. It is 20 miles southwest of the New Laguna station on the Santa Fe Railway, about half way between Albuquerque and Gallup. The town has been in its present site atop a lofty isolated mesa for many hundreds of years. It has two colonies, Acomita and Santa Maria (McCarty's), located near the railway northwest of Acoma. The population of the three towns is about 1200.

2. PUEBLO WEAVING began in the 8th century, A. D. The oldest dated piece, by the tree ring calendar, bears the date 758 A. D. Weaving on the true loom appears somewhat suddenly among the Pueblos. It has not yet been determined whether it was invented by them or introduced from Mexico. Since this beginning weaving has been carried on continuously in cotton; and in wool since the introduction of sheep by the Spanish in the 17th century. For several generations it has been dying out, now surviving as a major craft only among the Hopi and Zuni, with occasional occurrences elsewhere. See leaflets 18 and 90-97.

3. WEAVING AT ACOMA has practically vanished, except for such work as is being done by young people as a result of Indian school teaching. The following notes were obtained from the tiny surviving group of old time weavers. See page 156 for list of illustrations of textiles in other leaflets in this series.

4. SEX OF WEAVERS. Weaving was principally men's work, though an occasional woman might weave. The weaving of belts, garters and hair ties was, on the other hand, women's work.

5. SEX OF EMBROIDERERS. This was done by women. Embroidery elsewhere among the Pueblos is done by men. It is not known whether the Acoma women were real exceptions to the rule; or whether the pueblo has been influenced by the customs of the Whites in this connection.

6. LOOM AND EQUIPMENT. This was said to be the same as at other Pueblos. Though no loom was seen, the woven articles from Acoma bear out the statement. For details see Leaflets 3 and 59-60.

7. WEAVING TECHNIQS were the same as at other Pueblos. Plain, diagonal and all-over diamond weaves were made. Leaflet 3 explains plain weaving; and the other two are described in Reference 1.

8. BELT WEAVING was done and still survives quite actively among older people as well as among school children and graduates. The belts seen which are certainly from Acoma are all red with green and white designs, though one with black designs was seen. There is no information as to whether there were any designs peculiar to the town. Those seen were of the same type as is made by the Navaho and other Pueblos. Stick heddles seem to have been the rule, though one old weaver said she had heard of the reed heddle being used in her youth. The general method of weaving wool belts is described in Reference 2. Originally handspun wool was used. This was succeeded by bayeta (see section 14) and later by the Germantown manufactured yarn universally used today by southwestern belt weavers.

9. KNITTING. Blue wool footless knee-length stockings were knit. None was seen, but it seems safe to presume that they resembled those made today by the Navaho, Zuni and Hopi. Old accounts of the town speak of their manufacture and use.

COTTON

10. CULTIVATION. A little cotton was grown around springs and in sheltered places. Its cultivation stopped about 1850-55, due to the increasing dryness of the climate. As far as could be discovered none is being grown today.

11. PREPARATION. No definite information is available about the methods of separating the cotton from its seeds; and of spinning. Leaflet 18 described these processes among the Hopi; and presumably the Acomans worked along similar lines.

12. ARTICLES MADE. It is certainly known from existing specimens that large shawls (B) (usually called by the Spanish term "manta"), shirts (G), kilts and breech cloths (E) were made. Since heavily fringed braided sashes were and are made at most other Pueblos they were probably made also at Acoma.

The shawls were embroidered with wool (see section 14) and some of them had a design peculiar to the town, two birdlike figures in the middle near the top. One is shown on the cover (B). Some of these were embroidered in black and others in rose and green. Reference 3 describes one in detail. Another type—said to be from Acoma—has rows of tall designs rising from the edges. Each design is made up of pairs of conventionalized flowers set one on the other to produce a design somewhat resembling either the sails set on the mast of an old fashioned square rigged ship; or a Chinese pagoda. These shawls are excessively rare, only a few being known today.

The breech cloths are very long—6 to 8 feet—and have a wide band of embroidery at each end. The 3 remaining today have embroidery in red, brown and blue. An example is shown on the cover (E).

The shirts are made in three pieces, a rectangle which covers the body, with a hole cut for the head, and two sleeves sewn to the shoulders. The edges of the body piece and of the sleeves are held together with ties. These shirts are embroidered as is shown by the specimen on the cover (G).

On the basis of the one specimen known the kilts resemble in shape and type of decoration those made today by the Hopi and others and widely used in all the Pueblos, a long rectangle with embroidery on the narrow ends. A drawing of the embroidery on the single specimen is shown on the cover (F). If this design is a typical example of Acoma kilt embroidery this Pueblo had a design for kilts not found elsewhere. 90; B and 92-93; A, show the usual pattern found on kilts.

WOOL

13. ARTICLES MADE. Blankets (D), women's dresses (C), and embroidered shawls (A) were certainly made; and presumably the blue wool shirts common to most of the Pueblos. A special class of very fine white wool articles, to be discussed below, was also produced.

If the few blankets known are any indication Acoma blankets were of the horizontally striped type common to the Pueblos. Due to lack of information no special features can be described. One old man, Lazaro Cerno, now about 85—or dead—wove what he said would be his last blanket in 1936 (D). It cannot be distinguished from any other Pueblo blanket.

The women's dresses are exactly like those made by the Hopi, a squarish rectangle of dark cloth in a diagonal weave, with bands in blue diamond weave on the long edges (C). The one distinguishing feature is in the dyeing, to be discussed in a later section.

The embroidered shawls (A) are the most spectacular and best known product of the Acoma weavers. Like the dresses they have a center section of dark diagonal weave. But the long edges are covered with broad bands of rich embroidery in bright colors. Red and blue are the most common colors, with red and green in second place. Occasionally other shades are seen. These shawls, which were also worn as dresses, went out of use about 1875.

The special type of fine white wool articles mentioned above does not seem to have been made elsewhere except at the neighboring Pueblo of Laguna. It appears that after cotton growing stopped 75 to 100 years ago the people turned to very finely spun and woven wool. The articles made of this fine wool were the same as those made of cotton. No examples from Acoma of this class of work are available today, as far as can be ascertained.

EMBROIDERY

14. MATERIALS. Most of the red embroidery on the Acoma cloth known today—except for students' work—is done with ravelings from various kinds of commercial cloth, such as the English-made baize called bayeta by the Spanish, American wool bed blankets, or American bolt flannel. There is some handspun thread and an occasional use of a fine 3-ply commercial yarn called Saxony. The blues and greens are handspun, though they may be ravelings.

15. NEEDLES were originally made of wood by the Indians. Later, wandering Mexican blacksmiths made iron ones; and still later ordinary commercial steel needles were used.

16. TECHNIC. Though no descriptions are available it may be presumed that the ordinary Pueblo process was followed. The finished article was taken from the loom. Those sections to be embroidered were held taut by various kinds of stretchers while the embroidering was in process. The stitch used is described in Reference 3.

DYES

17. MATERIALS. Black was made from yellow ochre and pinyon gum, though sometimes the bark of mountain mahogany, or a sunflower-like plant were added. The use of ochre and gum without bark is a notable variation from the usual southwestern practice. But informants knew about both and insisted that the barkless type was used. I feel that my informants must be mistaken, for laboratory tests show that the ochre-gum combination does not make black. Tannin from any one of a number of plants must be added to make black. It is quite possible that the difficulty lies in faulty interpreting. Blue came from indigo, and yellow was made from the flower of the rabbit brush. It was said that no green dye was made, but that it was imported from Mexico. But since other Pueblos make green from indigo and rabbit weed yellow it may be that the old people had forgotten.

There was no bright red dye, ravelings of cloth previously dyed red by the Whites with cochineal or madder being used. But mention was made of a dark red dye made from some unidentified flower with a red center.

18. TECHNIC. The most unusual feature of the dyeing at Acoma was the custom of redyeing the women's black dresses and shawls after they had been woven. This was done every few years to freshen up the black. As the dresses were made with bright blue diamond edges this redyeing tended to dim the blue and to give it a brownish tinge. All dresses known or said to be from Acoma show this dulled blue. Naturally the embroidered dresses were not redyed.

Compiled by F. H. Douglas from his field notes and from examination of the great collections. For comparative reading see:

AMERICAN ANTHROPOLOGIST

1. Zuni weaving technique—Leslie Spier. Vol. 26, no. 1, 1924

SMITHSONIAN INSTITUTION

2. The Navajo Belt-weaver—R. W. Shufeldt. Proceedings, Vol. 14, 1891

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3. An embroidered cotton garment from Acoma—F. H. Douglas. Material Culture Notes, no. 1, 1937

MUSEUM OF NORTHERN ARIZONA

4. Technique of the major Hopi crafts—M.-R. F. Colton. Museum Notes, Vol. 3 no. 12, 1931

For additional illustrations of Pueblo textile types referred to in this leaflet see the following pictures in other leaflets. Knit wool leggings, 94-95; I, 96-97; C: Embroidered cotton shawls, 90; D, 91; C, 96-97; A: Wool shirts, 90; G, 96-97; I: Embroidered wool shawls, 94-95; A, D: Wool belts, 94-95; B, C, 96-97; E: Braided cotton sashes, 90; A, 96-97; B.

Thanks are due to Mrs. Harold Colton and Dr. Harry Mera for suggestions.

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Tewa specimens have starred letters (B*). The other specimens, all of Pueblo make, are shown here to help make the text clear.

WEAVING IN THE TEWA PUEBLOS

Tesuque, Nambe, San Ildefonso, Santa Clara, San Juan

DECEMBER, 1939

LEAFLET 90

Reprinted July 1967

1. THE TEWA PUEBLOS (Táy-wah) are located north of Santa Fe, New Mexico, in the valley of the Rio Grande. Tesuque (Teh-sóo-kee) is about 12 miles from town and has a population of 135 persons. The other villages are 30 or 35 miles north of town and within a few miles of each other. San Juan (Sahn Hwáhn) has a population of 569; Santa Clara (Sáhn-ta Kláh-rah), 450; San Ildefonso (Sahn Ill-de-fón-so), 134; and Nambe (Nahm-báy), 139. Tewa is the name of the tribe to which these villages belong. The language falls in the Tanoan family. The villages have been in their present sites since about 1700; but they are located on or near the sites of much older villages of the same tribe.

2. PUEBLO WEAVING began in the 8th century A. D. The oldest piece of cloth, made of cotton, comes from Arizona and is dated 758 A. D. Weaving on the true loom appears rather suddenly among the Pueblos. Whether the loom was invented by these people or imported from Mexico is not known. Since its first appearance weaving has been carried on continuously in the Pueblo villages. To the weaving of cotton was added that in wool after the introduction of sheep by the Spanish in the 17th century. But for several generations weaving has been dying out, now surviving as a major craft only among the Hopi and Zuni, with occasional occurrences elsewhere. See Leaflets 18, 89 and 91-97.

3. TEWA WEAVING HISTORY is almost unknown. The ancient ruins in their region are in the open so that moisture has rotted any textiles which may have been left long ago. That there was weaving in early Spanish times is certain because of references in Spanish documents. It was carried down into the 19th century to a slight extent on the evidence of the aged men and women who supplied the following notes. The coming of the Denver and Rio Grande railroad from southern Colorado to Santa Fé in the early 1880's hastened the end of an already dying art by bringing commercial cloth within easy reach of the Indians.

Today there is still a little weaving among the Tewa, almost entirely belt weaving, which is in the unbroken line from the past. Besides there is a considerable amount of production on the part of young women who have been taught weaving and embroidery in the Indian Service schools in the last decade or so.

4. THE INFORMATION GIVEN HERE was obtained from a number of aged men and women who either had been weavers or were the children of weavers and had heard about or seen the work of their parents. All were shown good examples of old Pueblo textiles so as to make clear to them exactly what was being investigated. The information given by them is remarkably consistent, though there is some disagreement. The picture which is built up by these statements is that of an art which, for a long time previously at least, had never been very highly developed among these Pueblos. The relative nearness of these villages to the skin-wearing Plains tribes tended to make the Tewa use skin clothing and robes, with a resulting lack of need for woven things. As indicated above, this always rather slim production was brought to an end by the coming of the railroad.

In this leaflet the available information from each village will be summarized only, the opinion of the majority being taken in cases of disagreement. Full descriptions of the types of textiles mentioned in this leaflet are given in leaflets 92-93 and 94-95. See page 160 for references to illustrations in other leaflets in this series.

5. SEX OF WORKERS. Weaving and embroidery were done by men, with an occasional woman doing some embroidery. 3 or 4 men weavers in each village was the customary state of affairs.

6. LOOMS AND TECHNICS. Though no looms remain today it was said that they were just like those used by the Navaho and modern Pueblos to the West. This is an upright loom, with the warp controlled by stick heddles. It is fully described in Leaflet 3. In the Pueblo world looms are usually set up inside the houses, or in the kivas or ceremonial rooms. Plain, diamond and diagonal weaves were produced.

7. EMBROIDERY was done with wood or turkey bone needles, followed later by steel ones. The section to be embroidered was stretched on some sort of frame to keep it tight. The work was done on both wool and cotton garments.

8. TESUQUE. Only one person was interviewed at this village, and she could only remember the weaving of her grandfather. She did not remember if there were other weavers. Her grandfather stopped weaving about 1880. He both wove and embroidered in wool and cotton. From wool he made the standard woman's black dress, coarse striped blankets (I) and the black shawls with colored embroidery, using red and green as the color scheme. Reference 1 also speaks of these as being made at Tesuque, but refers to red and blue as the colors. From cotton were made shawls (D), kilts (B) and shirts, all embroidered with wool; maiden shawls, with red and blue woven wool edges (F); and heavy braided sashes (A). This last type is still made at Tesuque, as it is in the other Tewa towns. It is the only type which has survived from the old days without a break. Brocaded dance sashes were made (C), but whether of wool or cotton was not discovered. Nothing was known about the knitting of wool leggings, but openwork crocheted cotton leggings were made (H).

9. NAMBE. 4 people were seen, 2 very old and 2 middle-aged. 4 men weavers were remembered. Weaving stopped about 1870. Woolen articles remembered as being made included the woman's dress, the man's shirt, of which very few were made (G), and knit leggings. Blankets (I) and embroidered wool shawls were not mentioned. There is an old photo showing a Nambe girl wearing one of the latter, but it lacks information as to whether the garment was made at Nambé. From cotton were made the maiden shawl with red and blue wool edges (F), the shawl (D), the kilt (B) and the braided sash (A). Kilts and shawls were embroidered. The kilts and sashes are still made as part of the old tradition. Shirts and openwork leggings (H) were not mentioned. Cotton was raised long ago. Brocade wool sashes (C) were not made but obtained from the Hopi or Keres. Between 1932 and 1936 a Mrs. Thomas, an Indian Service teacher, revived weaving and taught several people how to spin, weave and braid cotton, and how to embroider it.

10. SAN ILDEFONSO. Two men were seen, one an old man, the other the son of the last weaver. Weaving stopped with the death of the latter in 1887. Women's black dresses, men's shirts (G), blankets (I), and shawls embroidered with red and yellow were made from wool. The knitting of leggings was denied. There was a disagreement about the making of brocade wool sashes (C), but the evidence favors a positive answer to the question. Cotton was grown long ago and from it were made embroidered shawls (D) and kilts (B), and maiden shawls (F). Openwork cotton leggings (H) were made. The braided cotton sash (A) still survives. The son of the last weaver stated that his father used to make very fine white wool shawls and embroider them. Embroidered cotton shirts were not mentioned.

11. SANTA CLARA. One very old man and one of middle age were interviewed. Weaving stopped about 1890. This is confirmed by reference 2. This reference says that cotton was grown as late as 1909, but the old men denied this. Working in wool the weavers made women's black dresses, men's shirts (G), brocaded sashes (C), and blankets (I). With cotton imported from Chihuahua—according to the old men—the weavers made embroidered shawls (D) and kilts (B), maiden shawls (F) and braided sashes (A). The last still survives. Openwork cotton leggings (H) were also made. Embroidered cotton shirts and wool shawls were not mentioned. One man recalled that in his father's house the loom was set up in a separate room so that the children would not tangle the threads. Both men and women knitted wool leggings.

12. SAN JUAN. One very old man and two very old women were interviewed. They recalled three weavers, and that the craft came to an end about 1885. One of the old women had been an embroiderer since she was 16 and still did a little work. But normally men did all such work. Women's dresses of the usual type, some all black and some with the standard blue edges, were made. But not enough were woven so a few had to be got from the Hopi. Today all the Pueblos get their black dresses from the Hopi. A few wool blankets (I) were made, as well as embroidered black shawls. Red and green were the colors used in the latter. Work in cotton was restricted to embroidered shawls (D) and kilts (B), openwork leggings (H) and shirts, and braided sashes (A). Cotton was not grown, being imported from the South. The making of wool shirts (G), brocaded sashes (C) and knit leggings; and cotton maiden shawls (F) was denied.

13. NARROW RED WOOL BELTS were not referred to specifically. But as they are made today in nearly every Pueblo it seems reasonable that they were woven. They are produced today in at least Santa Clara and San Juan. Plain striped belts (E, K) were once made in addition to those with geometric designs (94-95; B, C). This striped type seems to have been a specialty of the Tewa towns. J is a very new San Juan belt of the cross barred type made in several Rio Grande Pueblos.

Compiled by F. H. Douglas from his field notes and from the following sources:

BUREAU OF AMERICAN ETHNOLOGY

1. Pueblo Indian Clothing—Matilda E. Stevenson. A manuscript prepared in 1910.
2. Ethnobotany of the Tewa Indians—W. W. Robbins, J. P. Harrington and Barbara Freire-Marreco. Bulletin 55, 1916.

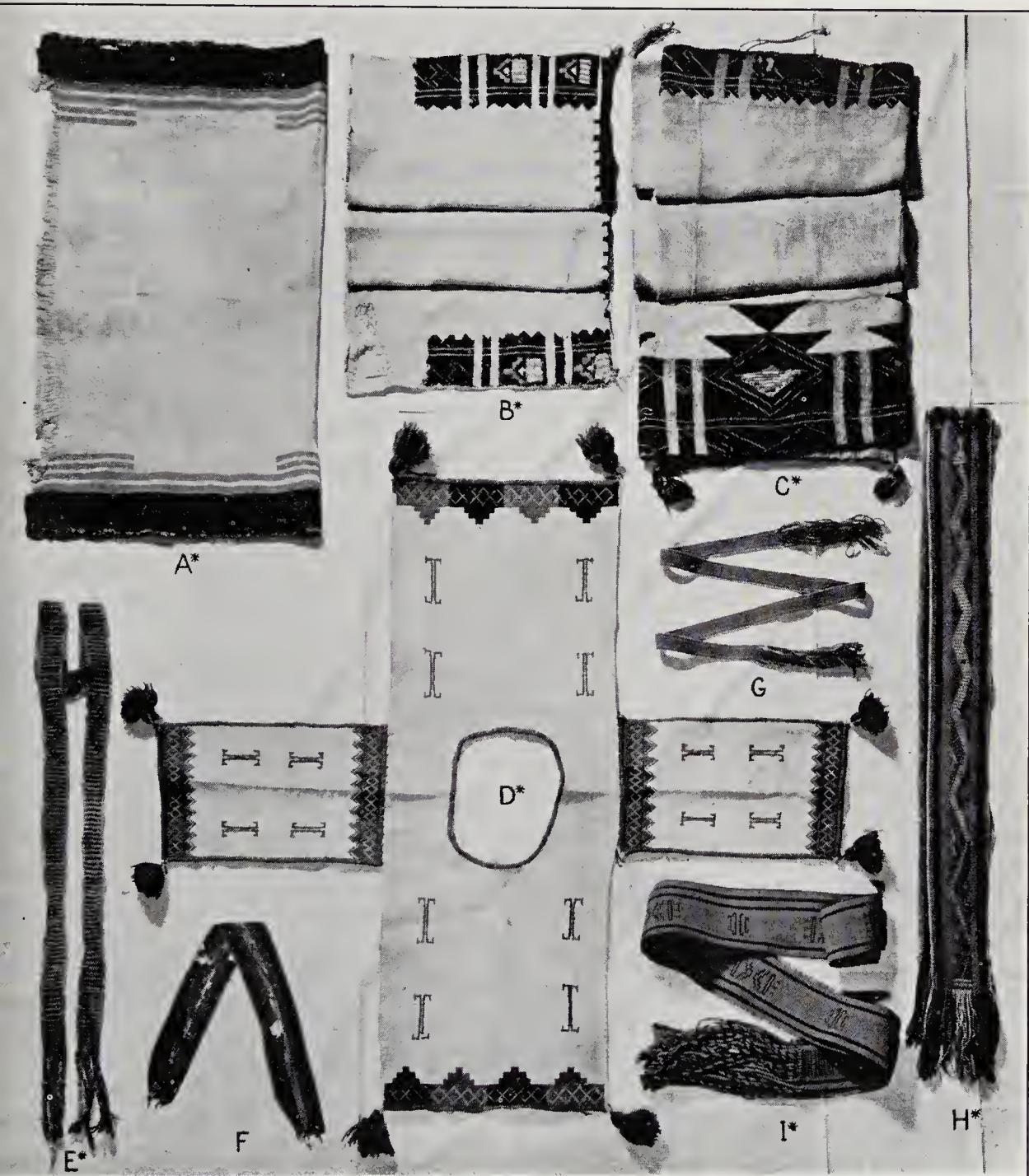
For additional illustrations of Pueblo textile types referred to in this leaflet see the following pictures in other leaflets: Woman's black dress, 89; C, 94-95; K, 96-97; N: embroidered wool shawls, 89; A, 94-95; A, D: embroidered cotton shirts, 89; G, 92-93; I: knit wool leggings, 94-95; I, 96-97; C.

Thanks are due to Mrs. Harold Colton and Dr. Harry Mera for suggestions.

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Specimens with starred letters (A*) are from the towns to which they are assigned.
The others are examples of standard Pueblo types.

Weaving of the Keres Pueblos

Laguna, Tsia, Santa Ana, San Felipe, Santo Domingo, Cochiti

Weaving of the Tiwa Pueblos and Jemez

Isleta, Sandia, Taos, Picuris, Jemez

1. THE KERES PUEBLOS (Kay-res) lie in the northern and western quarters of a circle extending about 45 miles around Albuquerque, New Mexico. Laguna (Lah-goo-nah) and its colonies lie 40 to 50 miles straight west on or near the Santa Fe railway. The population is about 2500. Tsia (Tsee-yah) and Santa Ana (Sahnt' Ah-nah) are about 38 and 30 miles northwest in the valley of the Jemez River. Their populations are 210 and 258. Santo Domingo (Sahn-to Do-meeng-go), numbering 924, is 36 miles north on the Rio Grande. San Felipe (Sahn Fay-lee-pay), with a population of 641, is 30 miles north beside the Rio Grande. Cochiti (Ko-tchee-tee) is about 40 miles north, also on the Rio Grande. Its population is 312. The remaining Keres pueblo, Acoma, is not discussed in this leaflet. See Leaflet 89. Keres is the name of the tribe to which all belong, though there is no tribal organization binding all together. The language spoken is Keresan. The villages have been in their present sites since about 1700; but they are located on or near sites of much older villages of the same tribe.

2. PUEBLO WEAVING began in the 8th century A. D. The oldest piece of their cloth known, made of cotton, comes from Arizona and is dated 758 A. D. Weaving on the true loom appears rather suddenly among the Pueblos. Whether the loom was invented by these people or imported from Mexico is not known. Since its first appearance weaving has been carried on continuously in the Pueblo villages. To the weaving of cotton was added that in wool after the introduction of sheep by the Spanish in the 17th century. For several generations it has been dying out, now surviving as a major craft only among the Hopi and Zuni, with occasional occurrences elsewhere. See Leaflets 18, 90, 92-97. Belts (H, I), hair ties (G) and garters (F) of wool are made in many Pueblos.

3. KERES WEAVING HISTORY is largely a blank. Little if any work has been done in the ruins of their ancient villages; and the fact that these sites are not protected from the weather makes it unlikely that any cloth has survived. Occasional references in Spanish documents indicate that weaving was done through the 17th and 18th centuries. It still existed to some extent in the 19th century on the evidence of the aged men and women who supplied the following notes. There are at least 2 living Keres weavers who are active. The building of the Santa Fe railroad down the Rio Grande valley in the 1880's brought an already dying art to an end by bringing commercial cloth within easy reach of the Indians.

Weaving is not yet completely dead among the Keres. A man at Tsia and another at San Felipe are fairly active; and belt weaving is done in a number of towns. The teaching of weaving in Indian Service schools has resulted in the development of a new generation of women textile workers in the last 10 or 15 years.

4. THE INFORMATION GIVEN HERE was obtained from a number of old people who had either been weavers or were the children of weavers and had heard about or seen the work of their parents. All were shown good examples of old Pueblo textiles so as to make clear to them exactly what was being investigated. The information given by them is remarkably consistent, though there is some disagreement. The impression is given that weaving was never very highly developed at these Pueblos, at least in recent centuries.

The well known secrecy of the Keres about their own affairs made it difficult to get more than the barest smattering of information. This factor, plus the very small number of people seen, must be given consideration in concluding how accurate a picture is given by the information presented here. Full descriptions of the textiles mentioned here are given in leaflets 92-93 and 94-95. See page 164 for references to illustrations in other leaflets of this series.

5. SEX OF WORKERS. Weaving and embroidery were done by men, though an occasional woman might learn the art. While no specific information was obtained as to the number of workers in each town in the old days, the impression was given that they were fairly numerous, more so than in the Tewa villages discussed in Leaflet 90.

6. LOOM AND TECHNICS. The two active weavers seen stated that the looms were just like those of the Hopi and Navaho. This is an upright loom, with the warp controlled by stick heddles. It is fully described in Leaflet 3. The looms were set up in the houses, though at Cochiti it was said that sometimes weaving was done in the kiva, or ceremonial building. Plain, diamond and diagonal weaves were produced.

7. EMBROIDERY was done after the cloth had been woven and taken from the loom. The sections to be decorated were stretched on some sort of frame to keep them tight. In the early days wood or bone needles were used, both being supplanted by steel needles at a later period.

8. LAGUNA. Four aged people were interviewed and one middle-aged woman, the daughter of one of the old women. One man, an active weaver all his life and the last living weaver at Laguna, was about 100 years old. The most interesting point which was

discovered was that there had been no weaving in cotton in Laguna in the knowledge of the informants. The oldest man had no knowledge of it and the weavers who were active till about 1915 worked in nothing but wool. From this material they made women's black dresses, men's blue shirts and breech clouts, and coarse striped blankets. Wool was knitted into tight leggings. Embroidery was restricted to the woman's black shawls or dresses with broad bands of rich decoration in red, blue and green on the long sides, the type of work which is usually associated with Acoma. Their manufacture ceased about 1875. A special type of wool garment, not found elsewhere, was the equivalent in wool of the white cotton shawl, with red and blue edges, widely made and used in other Pueblo villages. In the Laguna wool version the red was in three blocks of stripes instead of in a continuous band. An example is shown on the cover (A). The women's black dresses had blue edges when new, but this blue was dimmed by the redyeing which was done from time to time to freshen up the color. The oldest man displayed a dress he had made which showed this dimmed blue.

9. TSIA. Two old men and one old woman were questioned. One man was a retired weaver and the father of the middle-aged man who still is an active textile worker. The impression was gained that Tsia had been an active center for weaving. From cotton were produced women's shawls, both those with embroidery (C) and those with woven red and blue edges; men's embroidered kilts (B); and braided sashes. Wool was woven into women's black dresses, which were redyed as at Acoma and Laguna; brocaded dance sashes; and coarse blankets striped in white, black and blue in the ordinary Pueblo style. Tight wool leggings were knitted. Cotton was grown and spun, and still is to a very limited extent. The making of embroidered black wool shawls was specifically denied. The active weaver and embroiderer is Vivian Shije, brother of Velino Shije (or Herrera) the well known painter. Today a good many women are weaving wool belts (E), many with a characteristic cross bar design suggesting a railroad track.

10. SANTA ANA. Two old men were interviewed, both the sons of weavers. They agreed that women's black dresses, men's blue shirts, striped blankets and knitted leggings were made from wool; and that women's cotton shawls with red and blue edges were made from cotton. They denied the making of embroidered cotton shawls (C) and kilts (B), and wool brocaded sashes. But the old people at Tsia, their near neighbor, said all of these things were made at Santa Ana. An embroidered white cotton shawl (C), collected many years ago at Santa Ana, shows some technical peculiarities not appearing on the work of other towns. This may be only some worker's individual trick; or may be a local peculiarity.

11. SANTO DOMINGO. One old man from this town was interviewed. He was not communicative and would say little more than that there had been weaving in both wool and cotton in his village. Striped blankets and women's black dresses were made, and several unspecified cotton articles. Women's wool belts (I), of the ordinary Pueblo-Navaho type, are made today and sold in the trading post.

12. SAN FELIPE. Two old men, both the sons of weavers, one middle-aged man, and the young practising weaver were questioned. The young weaver's home was visited and his stock examined. He belongs to a long line of weavers. His name is Dario Chavarria. He still grows a little cotton for his own weaving. Woolen objects made were the woman's black-dress, the man's shirt, the brocade dance sash (still made by Chavarria), striped blankets, and knitted leggings. Cotton articles included the woman's embroidered shawl (C), the red and blue edged shawl, the embroidered dance kilt (B) and the braided sash. Chavarria makes embroidered cotton breech cloths of a type not seen elsewhere as far as design is concerned. The only other place where cotton clouts was found was Acoma. Open-work cotton stockings of the type usually thought of as Tewa are made by one woman. Both old men were very familiar with weaving technic, going into long explanations of technical details which they had seen or with which they had helped.

13. COCHITI. One elderly man, the son of a weaver, and several middle-aged people were interviewed. There is no weaving at Cochiti now except the belt weaving common nearly everywhere. In the old days wool was woven into women's black dresses and brocaded sashes; and knitted into tight leggings. The making of blankets was denied. As they were made in all the neighboring towns it may be that their making had merely been forgotten at Cochiti. Cotton articles included women's embroidered shawls (C), shawls with red and blue edges, embroidered dance kilts (B) and braided sashes. Cotton was grown until about 1900. It was claimed that the designs in the embroidery on the shawls were somewhat different from those in other towns, but details were not given. The raveling of bayeta or other commercial cloths to get embroidery threads was voluntarily mentioned.

TIWA (TEE-WAH) WEAVING

14. THE TIWA VILLAGES are four in number: Taos (Táh-os) population 783, and Picuris (Pee-koo-reéce), population 98, both located about 75 miles north of Santa Fe, New Mexico; Isleta (Ees-láy-tah), population 1167, and Sandia (Sahn-dée-yah), population 128. The former is 13 miles south of Albuquerque, New Mexico, and the latter 13 miles north of the same town. These towns speak dialects belonging to the Tanoan linguistic family.

15. TIWA WEAVING is easily summarized by saying that except at Isleta—see below—it has not existed in the memory of living people. Taos and Picuris informants denied any sort of textile work, saying that the people used skins or cloth imported from other Pueblos. Two old men of Sandia stated that their town had never done any work in cloth except the making of drawnwork designs on commercial cotton shirts.

16. ISLETA WEAVING. One middle-aged man and his aged mother were seen. They felt that the only weaving in the town had been done by Laguna men who had migrated to Isleta in the 1880's. The last one of these died in 1901. The one textile product peculiar to the town was a thin solid blue blanket. None was said to remain today, all having been used as burial shrouds. One old man wove both wool dresses and cotton shawls (C) of the ordinary type. There used to be knitting of woolen leggings, some with bands under the instep. This latter is a local variation I have not found elsewhere. The old woman said that embroidery had been done long ago but did not give particulars. She and several other women still make wool belts. A snake design on belts (H) was said to be an Isleta specialty.

A somewhat varying picture of weaving at Isleta is given in the following quotation from Reference 1. "There is some spinning and weaving of home-grown cotton, for hair and dress belts and dance leglets and kilts. There are four women belt weavers. Men's dance kilts used to be woven by women; now men weave them. There are two women weavers of wool blankets. One of the oldest men of the town was once a blanket weaver." This information seems to have been gathered in 1925.

JEMEZ (HAY-MESS) WEAVING

17. JEMEZ is the only remaining town of the Towa branch of the Tanoan linguistic family. It is located about 40 miles northwest of Albuquerque, New Mexico, in the Jemez River valley. Its population is 675.

18. JEMEZ WEAVING. Two families were visited. In one was an elderly woman, the daughter of a weaver. In the other were several middle-aged people who were weavers or the children of weavers. Weaving is still done, or at least the knowledge of how to do it is current. From wool were made women's black dresses, brocaded sashes and knit leggings. From cotton were made embroidered shawls (C), dance kilts (B) and braided sashes. An embroidered shawl made at Jemez was shown and appeared to resemble those made elsewhere. A local specialty is the embroidered cotton shirt (D). These were made formerly and still are by school girls. A little cotton is still grown.

Compiled by F. H. Douglas from his field notes and the following sources.

BUREAU OF AMERICAN ETHNOLOGY

1. Isleta, New Mexico—E. C. Parsons. 47th Annual Report, 1932

AMERICAN ANTHROPOLOGIST

2. Zuni weaving technique—Leslie Spier. Vol. 26, no. 1, 1924. Lists the scanty references to Pueblo weaving in the literature.

For additional illustrations of Pueblo textile types referred to in this leaflet see the following pictures in other leaflets. Women's black dresses, 89; C, 94-95; K, 96-97; N: wool shirts, 90; G, 96-97; I: wool breech clouts, 94-95; M, 96-97; H: blankets, 89; D, 90; I, 96-97; L: embroidered wool shawls, 89; A, 94-95; A. D: cotton shawls with red and blue edge, 90; F, 92-93; E: braided sash, 90; A: brocaded sash, 90; C, 94-95; P: knit leggings, 94-95; I, 96-97; C: crocheted open work leggings, 90; H, 92-93; K: women's belts, 94-95; B. C.

Thanks are due to Mrs. Harold Colton and Dr. Harry Mera for suggestions.

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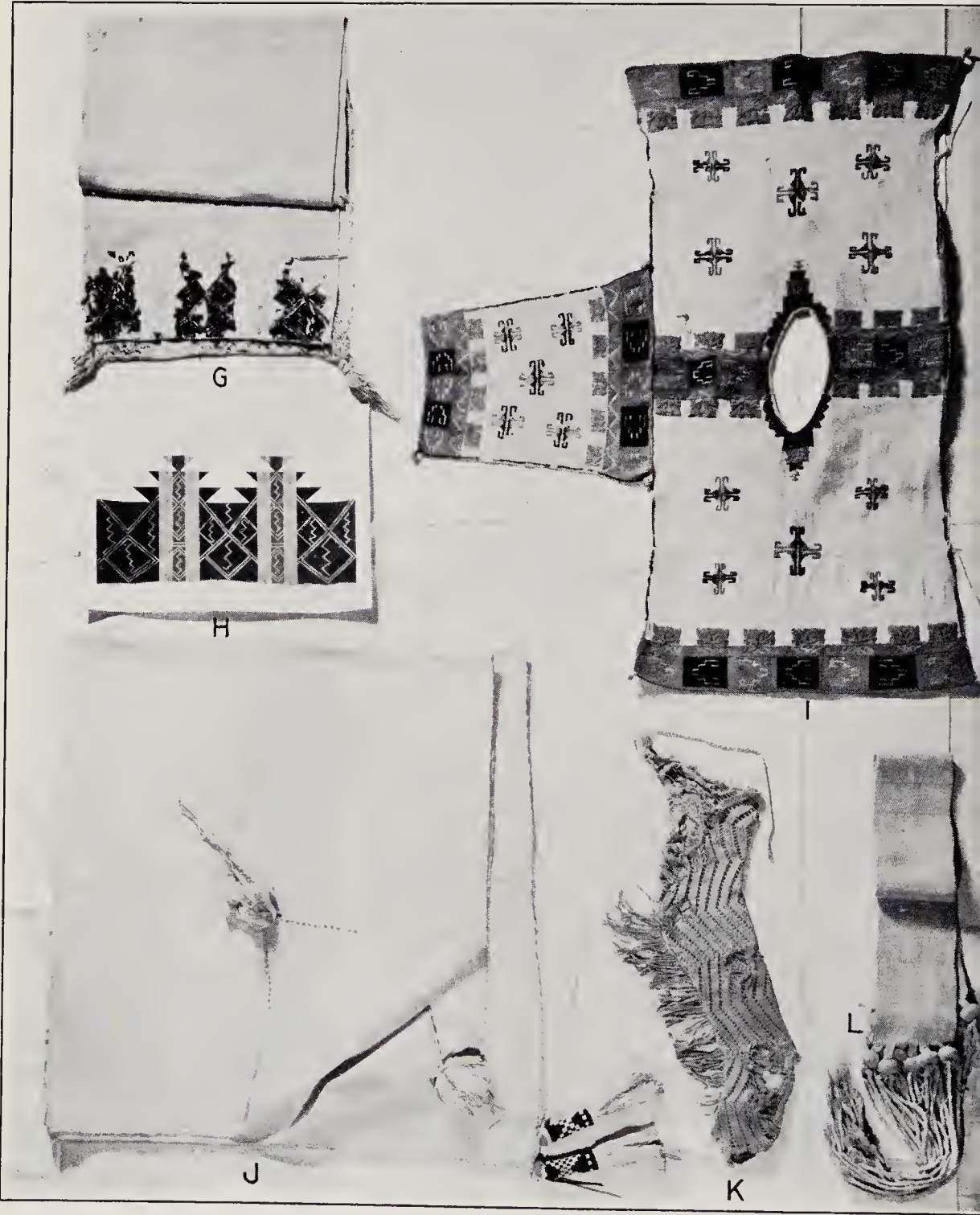


Main Types of Pueblo Cotton Textiles

LEAFLETS 92-93

JANUARY, 1940

2nd Printing, June 1957



1. INTRODUCTORY. The purpose of this leaflet is to describe the main types of articles made from cotton by the Pueblo Indians of Arizona and New Mexico. For the names, locations and other facts about these people and their villages see Leaflets 45-46. The distribution of the manufacture of these different articles in the last century is described in the following leaflets: Hopi, Leaflet 18; Tewa, Leaflet 90; Keres, Tiwa and Jemez, Leaflet 91; Acoma, Leaflet 89; Zuni, Leaflets 96-97. In these leaflets references are made to various articles without giving much detail about them. These details are given in this leaflet and in Leaflets 94-95, which deal with woolen articles. References in the text of this type "(90; F)" are to illustrations in other leaflets of this series.

2. THE HISTORY OF COTTON WEAVING is fairly clear in its early centuries; is practically a complete blank in its middle period of several centuries; and is quite well known from about 100 years ago up to today. Cotton weaving begins somewhere in the 8th century A. D., or sometime between 700 and 800. The oldest date in the tree ring calendar associated with cotton is 758 A. D. This fragment is from east central Arizona, somewhat northeast of the apparent center of the region where cotton weaving seems to have reached its greatest heights. From the ruins of towns which flourished in the Pueblo region through the following seven or eight hundred years have come many fragments and a few whole pieces of cotton cloth, indicating that the art was wide spread. If these fragments give a true picture weaving became more and more elaborate as the centuries passed, this elaboration reaching a climax in or around the 15th century. At this time complex openwork, damask, and slit weave pieces were made in addition to the more common plain and twilled, or diagonal, weaves.

By the time the Spanish arrived and explored the country between 1539 and 1600 it would seem that these elaborate weaves had died out, though plain weaves were still made in quantity. But it is possible that the Spanish simply failed to mention the complex weaves. The language of the old chronicles is rather vague as far as textiles are concerned. Knowledge of Pueblo weaving practically disappears during the Spanish period, though there are enough references to indicate that it did not die. In the 17th and 18th centuries the encomienda system of forced labor is known to have wrung thousands of yards of cloth from the Indians. But so far as is known all of the cloth produced under this system has disappeared, so that we have no knowledge as to its appearance and technical character. That the Spanish did not introduce their own horizontal loom to replace the native vertical apparatus seems indicated by the fact that the native loom is still in use and has been so as far back as scientific knowledge goes. It is not likely that the Indians would revert to their own loom if they had been forced for several centuries to use another type. Hence if the native loom persisted it seems reasonable that the types of textiles which the Indian loom produced would persist also. Though in the sweat shops of the encomienda system Spanish looms may have been used, the native loom surviving only in the more remote native towns. All of this is admittedly speculation, however.

Accurate knowledge of Pueblo cotton weaving does not begin again until 1879 when James Stevenson began to collect for the Bureau of American Ethnology. His collections indicate that at some time previous the openwork, damask and slit weaves had disappeared; and that embroidery and brocading had come into existence. The plain and diagonal weaves have carried through right from the beginning, 1200 years ago.

Shortly after Stevenson began scientific collecting, the building of railroads through Pueblo territory began to force the cessation of Pueblo weaving by the wholesale introduction to the Indians of factory-made blankets, articles of clothing and bolt cloth. As the old weavers died few young people took up the craft. So today we have cotton weaving still active among the Hopi, somewhat less so at Zuni, and gone elsewhere except for a few isolated weavers. Except among the Hopi and Zuni and the few other weavers just mentioned, the only cotton article which is still made in the old unbroken tradition is the braided sash to be described later in this leaflet. But a new school of workers in cotton has arisen through the efforts of the United States Indian Service which has introduced cotton weaving and embroidery in its schools and so trained a number of girls and young women in the art. The great break with tradition here is that women now do the work instead of men.

3. THE SOURCE OF COTTON until modern commercial material became available was—and still is to a slight extent—a plant native to the Southwest, *Gossypium Hopi* Lewton, fully discussed in reference 1. This plant was cultivated by the Pueblos in many parts of their area. Full botanical details are given in reference 2. In recent times there have been various substitutes, commercial cotton batting, Pima cotton from southwestern Arizona, and ordinary cotton string.

4. PREPARATION OF THE COTTON. The seeds were removed either by hand or by whipping the bolls between two blankets. The whipping loosened the seeds and the cotton stuck to the rough surface of the blankets from which it could be easily scraped. In ancient times the cotton was untangled with the fingers; but in modern times commercial wool cards have been used. Cotton is and was spun on the same spindle used by both Navaho and Pueblo for spinning wool. This is simply a slender rod with a small disk flywheel. The ancient spindle was smaller than that used today. All of these technical processes are discussed in reference 1.

5. THE LOOM has always been the simple upright device so often described in literature about the Navaho. The Pueblo loom is set up inside the home or in the kiva, or ceremonial chamber; but otherwise it is just like that of the Navaho. The Hopi and Zuni use one accessory which is certainly not common, or used at all, on the Navaho loom. It is a slender stick fastened across the warp and moved upward as the finished edge of the fabric rises. Its purpose is to keep the fabric at an even width. Leaflet 3 describes this loom and the process of weaving.

6. SEX OF WORKERS. Both weaving and embroidery are the work of men among the Pueblos with one main exception and several minor ones. At Zuni today—and apparently for some time—women do most of the weaving. All the Zuni men seem to know how to weave and a few do. But women weavers are the rule there. The minor exceptions are found in a number of villages where an occasional woman learned to weave, or more commonly, to embroider. This was especially true of Acoma where women embroiderers were common.

7. WEDDING ROBES (J) for brides are the largest articles made of cotton. They are today restricted to the Hopi in both manufacture and use. As is the case with a good many modern cotton pieces of all types the warp is often commercial string. These robes are in two sizes. The larger is about 5 x 6 feet and the smaller about 5 x 4. The proportions and sizes vary considerably. Both are plain white without pattern. They are rubbed with fine white clay. Elaborate tassels in the lower corners, as shown on page 166, are the only

decorations. These tassels have a complex symbolism connected with women's sexual apparatus which is explained in reference 3. Details of manufacture and use are also given in this reference.

Some time after the wedding either of these plain robes may be embroidered in the manner described in section 8. Some Hopi villages decorate the larger size and some the smaller. Customs are not standardized and the whole subject is complicated. After they have been embroidered the robes are used as ceremonial regalia by women, or men dressed to impersonate women.

8. EMBROIDERED SHAWLS (D: 89; B: 91; C: 96-97; A) are widely used in the Pueblo region and were formerly woven in many villages. But today, except for an occasional piece, all are obtained from the Hopi or Zuni. Reference 7 describes the embroidery technic. They vary considerably in size within a limited range. The average dimensions for 14 are 36 x 51 inches, the length ranging from 41 to 58 and the width from 28 to 51. They are most frequently draped over the shoulders with the broad band of embroidery across the bottom. Cords for tying are found near the upper corners of the short sides (top of D). For a few ceremonial costumes they are worn like the black wool dresses with a fold under the left arm and the upper corners fastened over the right shoulder.

As the photograph shows (D) there are two bands of embroidery, always in wool, a narrow one covering most of the top edge and a wide one covering the whole bottom edge. The general layout of these bands is always the same but the details vary in a limited range. One variety, found on older pieces, has no colored medallions in the wide band, the decoration being restricted to the white meander patterns which are always found along the bottom of the wide band. There are a good many varieties of these meanders, all related to the type of design which has come down to modern times from very early prehistoric basketry through later—but still prehistoric—pottery and weaving. The choice of subject for the colored medallions is said to depend on the wishes of the individual workers. The common subjects are birds, butterflies, dragon flies, cloud and rain designs and various simple abstract figures. Newer pieces (96-97; A) have more elaborate medallions than older ones (90; D).

The color scheme is very standardized. The bands of embroidery are black and the pairs of narrow stripes which cut across them are green, though in old pieces this green has often faded to yellow. I have seen only one exception, a specimen with red stripes on the lower band. The medallions are in several colors, red, green and yellow being the most common.

All of these shawls are usually assigned to the Hopi. But recent investigations indicate that they were made at many Pueblos. I know of no way to tell the work of one town from that of another except possibly in one case, as follows. The broad lower band is always topped with groups of triangles in either threes or twos. The evidence indicates that those with groups of two triangles are usually from Zuni. Aged informants in many villages stated that the whole design layout was the same everywhere and until additional evidence is uncovered this statement is all we have to go by.

There are three special types of these shawls. One was certainly the product of Acoma only, and the second probably was. The third is described below. The first type (89; B), described in detail in reference 7, has, in addition to the common top and bottom bands of embroidery, two birdlike figures

in the center just below the top band. This type is larger than the ordinary kind, averaging 5 x 4 feet. It also shows a color variation, two of the existing specimens substituting rose for the usual black.

The second type has narrow bands at top and bottom from which rise parallel rows of embroidered designs which look like pagodas, or the sails set on a full rigged ship. These appear to be an Acoma specialty, though nothing definite is really known about them.

The third type appears to be a modern one only. It is simply an oversized variety of the ordinary embroidered shawl described in the first paragraphs of this section. Except for size the two types are the same. These large pieces are the large wedding robes decorated with embroidery by the Hopi, as described in section 7.

9. "MAIDEN" SHAWLS. This term is applied to white shawls with red and blue (E: 90; F), solid blue (F) or solid black wool edge stripes. The white center section has a diagonal weave, though one Zuni weaver used plain weave. While generally worn by young unmarried women their use is not restricted to such. There is considerable variation in size, the average of 6 being 36 x 43 inches. The lengths range from 37 to 48 and the widths from 30 to 37. One example is square, a very uncommon exception to general practice. The most common type has two stripes several inches wide along each edge, the outer being blue and the inner red. The blue edged type is very much less common; and that with a black edge is only known from a few specimens. These colored stripes are created by substituting colored wool wefts for the white cotton ones used in the rest of the shawl. The blue edges are made in a diamond weave and the red stripes in a diagonal weave. Both are woven so that most of the colored yarn appears on one face. Hence there are definite right and wrong sides to these shawls. These are worn draped over the shoulders or over one shoulder and under the opposite arm, the colored stripes being horizontal. I have no information as to whether these varieties have special uses, though the blue edge type is said by aged Zuni and Hopi weavers to be older than the red and blue type.

10. EMBROIDERED KILTS (A, B, C: 70; B: 91; B: 96-97; D). These are worn around the hips of men dancers in many ceremonies throughout the Pueblo area. The average size of 8 examples is 38 x 18 inches. The lengths range from 32 to 45 and the widths from 17 to 20. The range in length is doubtless due to the range in girth of boys, youths and men. Along most of each short end is a band of wool embroidery 2 to 5 inches wide. This band starts at one long side but does not reach the other, the undecorated section being hidden while in use by the brocaded sash universally worn with these kilts. The embroidery design is very standardized (A), showing rain clouds, and stripes representing fields, done in red, green and black. Sometimes other designs are used. The one Acoma kilt I have seen is quite different. It is shown on Leaflet 89; F. Possibly kilts with different designs, (B,C) are for special ceremonies. But I have no information about this possibility, inquiries about the point having brought forth vague or negative answers. Some kilts (A, B) have additional decoration in the form of a narrow black braided wool edging sewn along the bottom, sometimes further elaborated with a widely spaced row of small black squares, 4 or 6 among the Hopi, embroidered on the edge of the cloth next to the braiding. The Zuni claim this is a tribal specialty but the Hopi deny this.

11. EMBROIDERED BREECH CLOTHS (G) are now excessively rare. I have found only five, three from Acoma and two from San Felipe. Two

from Acoma measured $81\frac{1}{2}$ x 18 and 69 x 16 inches respectively. Two seen at San Felipe were about the size of the latter. About 1 foot of each end is embroidered. The Acoma pieces show complex geometric designs (H); while those from San Felipe have large simple units. Dark blue is the main color in the embroidery, with red, green and brown as trimming. At least one Zuni ceremonial costume called for a long cotton breech cloth. But today the old hand-made clouts are no longer used.

12. EMBROIDERED SHIRTS. On the evidence of the few existing specimens these shirts all followed the same pattern. Each had a long oblong section with a central hole for the neck, the ends hanging over the back and chest; and two sleeve sections made separately and sewn to the shoulders of the body section. The edges of the body and sleeve pieces are not sewn, being held together with ties placed at intervals. The shoulders, ends of the body section and cuffs of the sleeves are covered with heavy embroidery, and small embroidered units are placed regularly over the back and chest. Shirts are illustrated by (I: 89; G: 91; D). I have seen one shirt which is decorated with the pagoda-like designs described in the next to last paragraph of section 8. There is at least one shirt without embroidery. Whether it is simply unfinished or represents a now extinct type I do not know.

Red is the most common color on existing shirts, with blue and green as trimmings. Shirt making apparently only survives today at Jemez where a few have been made of commercial cloth with Germantown yarn embroidery (91; D). Acoma and Jemez appear to have been the main producers of shirts, though there is little real evidence to support this view.

13. BRAIDED SASHES (90; A) are made in many villages today exactly as they were made in prehistoric times, this type being the only one which seems to have been made continuously through the centuries. The sashes, often called "rain sashes" or, among the Hopi, "wedding sashes," are 4 to 5 feet long and 4 to 8 inches wide, about 6 inches being the average. At each end is a fringe of heavy twisted cords 18 to 24 inches long. There is no color or pattern. The fringe threads have large round knobs where they join the body of the belt. The complex braiding process used by the Hopi to produce such sashes is fully described in reference 6. Data are lacking as to whether this same process is used in other Pueblos. But this appears to be so. The common rain sash shows parallel rows of herring-bone units.

14. WOVEN SASHES (L) are also made. Superficially they resemble those made by braiding. But the woven examples show rather coarse diagonal, zigzag or horizontal lines instead of the parallel herring-bone vertical ridges of the braided type. This seems to be a modern development. A Hopi living at San Juan Pueblo crochets sashes of this type.

15. OPENWORK SHIRTS AND LEGGINGS (K: 90; H) have considerable use and some production today, especially in the Tewa towns. They are made by both crocheting and knitting. Hopi examples are knit, while those made in the New Mexico Pueblos are apparently crocheted. The openings are large and are arranged so as to leave fairly solid areas arranged in zigzags and other simple figures. Leggings are shown on the cover.

16. BROCADED SASHES (90; C: 96-97; G) are usually made of wool, but a few cotton ones have been produced. These sashes are made in two pieces, each $2\frac{1}{2}$ to 3 feet long and from 7 to 10 inches wide. There is about 6 to 8 inches of brocading at each end, fringing falling below the brocaded area. This type of sash is worn generally in the Pueblo area around the waists of men dancers in many ceremonies. Occasionally one sees shirts, pillow tops and

table runners brocaded like the sashes. These are modern products made for sale to tourists. The technic of brocading is fully described in reference 5.

It should be noted that brocading and embroidery are different. The latter is the process of decorating cloth with a needle; while by the former process decoration is applied by weaving. The technics can easily be distinguished by looking at the back of the specimen. Brocading produces narrow parallel bands of color. Embroidered work shows irregular stitches all over the surface.

Compiled by F. H. Douglas from his field notes, study of the great collections; and from the following references:

THE UNIVERSITY OF NEW MEXICO

1. Symposium on prehistoric agriculture, part 7; A summary of data on aboriginal cotton of the Southwest—Volney H. Jones. Bulletin 296, 1936

SMITHSONIAN INSTITUTION

2. The cotton of the Hopi Indians: a new species of *Gossypium*—F. L. Lewton. Miscellaneous Collections, Vol. 60, no. 6, 1912

MUSEUM OF NORTHERN ARIZONA, FLAGSTAFF

3. Hopi courtship and marriage—Nequatewa and Colton. Museum Notes, Vol. 5, no. 9, 1933
4. The arts and crafts of the Hopi Indians—M.-R. F. Colton. Museum Notes, Vol. 11, no. 1, 1938
5. Notes on Hopi brocading—F. H. Douglas. Museum Notes, Vol. 11, no. 4, 1938
6. The braiding of a Hopi wedding sash—Kate Peck Kent. Plateau, Vol. 12, no. 3, 1940

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7. An embroidered cotton garment from Acoma—F. H. Douglas. Material Culture Notes 1, 1937

COLUMBIA UNIVERSITY

8. Hopi Journal of A. M. Stephen—E. C. Parsons, ed. Contributions to Anthropology, No. 23, 2 vols. 1936

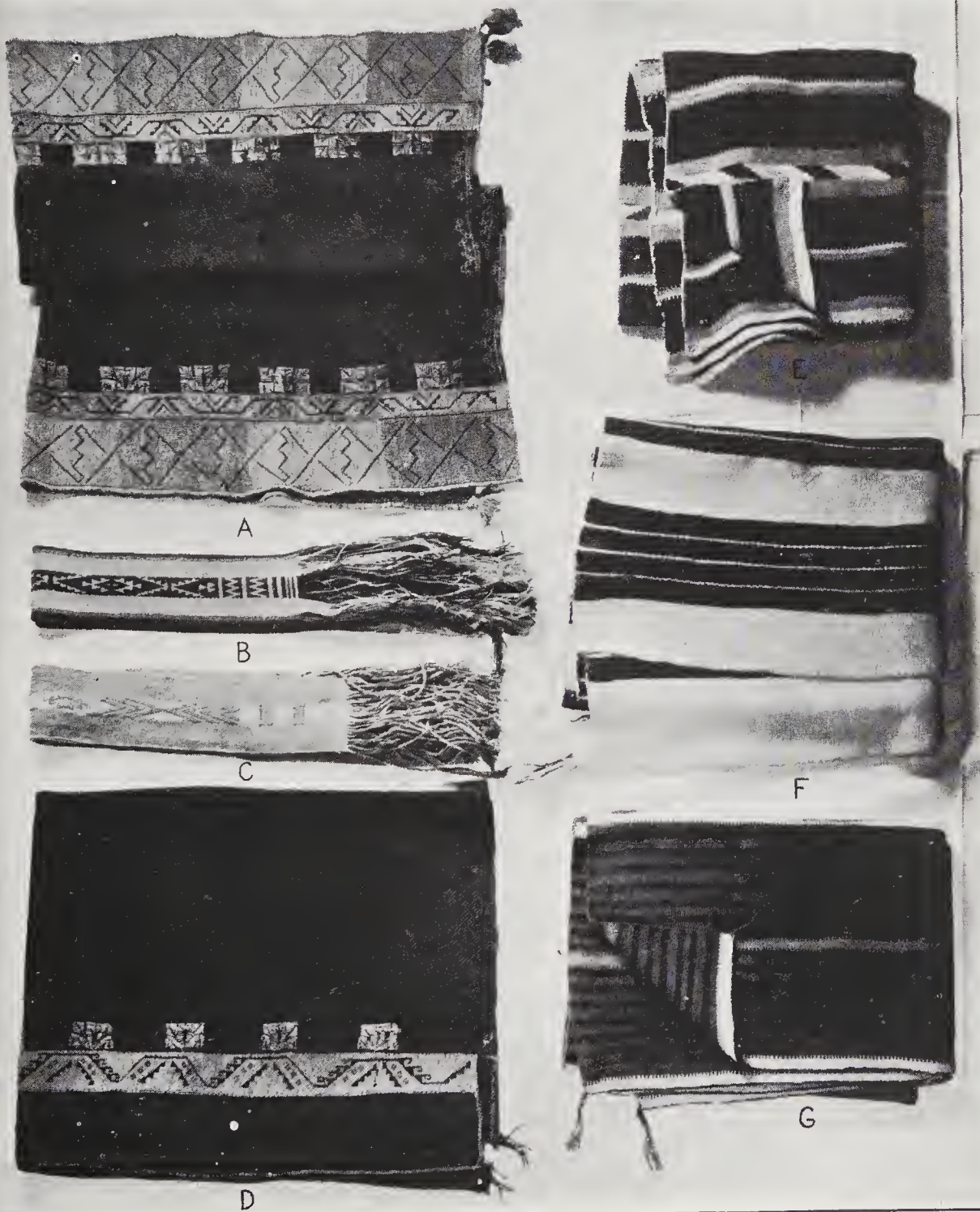
Thanks are due to Mrs. Harold Colton and Dr. Harry Mera for suggestions.

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NORMAN FEDER, *Curator*



MAIN TYPES OF PUEBLO WOOLEN TEXTILES

LEAFLETS 94-95

2nd Printing, February, 1955

Reprinted December, 1971



1. INTRODUCTORY. The purpose of this leaflet is to describe the main types of articles made from wool by the Pueblo Indians of Arizona and New Mexico. For the names, locations and other facts about these people and their villages see Leaflets 45-46. The distribution of the manufacture of these different articles in the last century is described in the following leaflets in this series: Hopi, Leaflet 18; Tewa, Leaflet 90; Keres, Tiwa and Jemez, Leaflet 91; Acoma, Leaflet 89; Zuni, Leaflets 96-97. In these leaflets references are made to various articles without giving much detail about them. These details are given in this leaflet and in Leaflets 92-93 which deal with cotton articles. References in the text of this type "(90; F)" are to illustrations in other leaflets of this series.

2. THE HISTORY OF WOOL WEAVING has received little attention from students so that information about it is scant. Its beginning was due to the introduction of sheep into the Southwest by the Spanish. Sheep were brought in by the first parties of explorers in 1540. But these animals were eaten, not used to produce wool. It appears that sheep as a source of wool did not become available in quantity until sometime soon after 1600 when permanent settlements by the Spanish were established. How soon after 1600 the Pueblos began wool weaving and whether the Spanish taught them to use wool are not at present known. By the 18th century wool weaving was well established for there are references to it in Spanish documents. There are American references to it in the early and middle 19th century. But no actual dated specimens go back farther than 1879 when James Stevenson began to make scientific collections in the region for the Smithsonian Institution. Investigations conducted in recent years indicate that by the 1880's Pueblo weaving had begun to decline in general because of the coming of the Rio Grande and Santa Fe railroads and the introduction of commercial cloth by them to the Indians. Being the farthest of all Pueblo tribes from the railroad the Hopi felt this influence much less than the others, with the result that today Hopi weaving is still an active craft with many followers. For many years the Hopi have supplied the other Pueblos with woven articles in wool and cotton. Weaving may still persist at Zuni. But elsewhere among the Pueblos it has disappeared with a few sporadic exceptions. There has been some revival of cotton weaving among school girls through the efforts of the United States Indian Service schools. Belt making is the only type of wool weaving which is done among the Pueblos except, as noted above, in the Hopi and Zuni villages.

It must have been relatively easy for the Pueblos to learn the use of wool in weaving. For its preparation for use is just like that of the cotton they had used so long—except for the removal of seeds—and therefore could be learned without trouble. Furthermore exactly the same loom is suitable for both; and the technics used in cotton weaving could be done equally well in wool.

3. THE HISTORY OF PUEBLO WEAVING is discussed at some length in Leaflets 92-93 and therefore needs only to be summarized here. It began in the 8th century A. D., advanced to a climax of complex weaves and designs in and around the 15th century and apparently thereafter began a very slow decline which is still going on, with the end apparently not very far away if present conditions continue.

4. PREPARATION OF WOOL. Wool is clipped from the sheep with commercial steel clipping shears obtained from the traders. The wool is washed and when dry is combed out, or carded, with pairs of commercial wool cards. These are small oblong boards with a short handle on one long side, and set

on one face with wire teeth. A small bunch of tangled wool is laid on one card. The other card is then drawn across the first a number of times. The combed bunch of wool is removed from the card in a soft fluffy roll. A number of these rolls are spun together into yarn with the aid of the same simple spindle used for cotton by the Pueblos for centuries; and for wool by the Navaho. It is a slender rod 1 to 2 feet long with a small flywheel. The roll of wool is caught on the point, the rod is spun with one hand, and the other draws the thread away from the point. The first spinning of the Navaho is coarse and must be repeated several times to produce fine yarn. But the Hopi produce fine yarn with one spinning. For extra fine thread the Hopi spin twice and rub the spun yarn with a corn cob to remove rough spots. Pueblo yarn is likely to be smoother and more even than that of the Navaho.

5. THE LOOM is the same as that used by the Pueblos for cotton weaving and by the Navaho. It is a simple frame stretched upright between the ceiling beams and the floor of the house, or of a kiva or ceremonial chamber. The Hopi and Zuni use one accessory which is certainly not common, if used at all, on the Navaho loom. It is a slender stick fastened across the back of the warp and moved upward as the finished edge of the fabric rises. Its purpose is to keep the fabric at an even width. The details of this loom and the process of weaving are described in Leaflet 3. Smaller looms based on the same general plan are used for weaving brocaded sashes, and belts, garters and hair ties.

6. SEX OF WORKERS. Both weaving and embroidery are the work of men among the Pueblos with one main exception and several minor ones. At Zuni today—and apparently for some time—women do most of the weaving. Zuni men seem to know how to weave and a few do. But women weavers are the rule there. The minor exceptions are found in a number of villages where an occasional woman learned to weave, or, more commonly, to embroider. This was especially true of Acoma where women embroiderers were common. Another minor exception is that today wool belt weaving is generally done by women in the numerous Pueblo villages in which this craft still exists as the only form of wool weaving.

BLANKETS

7. INTRODUCTORY. Blankets are the largest articles made of wool and must have been the most common product of the loom until the introduction of commercial blankets. For not only did both men and women wear them but also quantities were made for sale or trade to neighboring tribes. The lower Colorado River tribes are mentioned as wearing Pueblo blankets in the 1770's, for example. Today the woman's black dress is probably the most common product, practically extinct for everyday wear, but still used in many Pueblos for ceremonies and dances.

8. STRIPED TYPE (E, F, G: 89; D: 90; I: 96-97; L). Since such blankets were worn by people of all ages there is considerable variation in size, though the general proportions remain about the same. A typical large blanket is 4 x 6 feet in size. Some are proportionately somewhat narrower, others somewhat more square. The latter are discussed in the following paragraph.

There are two points in connection with tribal identification of striped wool blankets on which some light can be thrown. One deals with the question of Pueblo versus Navaho origin, for both groups made blankets of identical appearance. Though there may be exceptions, Navaho blankets of this type may be identified by the presence of irregularly placed diagonal lines in the

weaving; and Pueblo pieces by the absence of such lines. The technical reason for these lines is explained in Leaflet 86. The catch is that we do not know whether Navaho women always weave so as to produce these lines, usually called "lazy lines." If a Navaho woman does not wish to put them in she does not need to do so, thus producing a blanket indistinguishable from that of a Pueblo weaver, as far as our present knowledge goes. We feel much safer about Pueblo weavers for they do not weave so as to produce "lazy lines". But it should be noted that there is nothing to prevent their so doing and it may happen occasionally. The second point about tribal identification deals with discovering from which Pueblo any given blanket came. In this case we can only differentiate the blankets of Zuni, and that not with entire surety. Existing blankets known to be from Zuni are obviously more square than those known to be non-Zuni; and aged weavers at Zuni and elsewhere back this up, saying, however, that it was not an absolute rule. So we can only say that square blankets are likely to be from Zuni. As far as the blankets of other towns are concerned nothing can be said. All Pueblo blankets are usually called Hopi. But any blanket known to be 50 years or more old might be from any one of a number of towns. So it seems best to call any blankets not positively identified by the general term "Pueblo".

Striped blankets fall into two classes on the basis of design. One group is white or cream with dark striped designs (F: 90; I: 96-97; L). The other (E, G: 89; D) is entirely covered with blue and black stripes with some decorative stripes in other colors, most commonly white, with red in second place. Those with the blue and black stripes are often called "Moki pattern" blankets, though it is certain that not all were made by the Hopi (Moki). The white pieces appear invariably to be rather coarse and loosely woven, while the other type is usually fine and tight, though it may be loose. In all striped blankets the stripes run across the piece, never lengthways. Besides simple stripes there may be bands with little simple geometric figures (E); or those with edges trimmed with beading. (Beading in textiles is not decoration with glass beads, but the production of narrow decorative rows made up of small blocks in alternating colors.) Pueblo blankets are not fringed, only having scant corner tassels.

9. ZUNI BLACK BLANKETS (96-97; K). The Zuni man wore coarse striped blankets for everyday use. But on ceremonial occasions he wore—and still wears—a type of blanket found only in this Pueblo. It is solid black, with no design whatsoever. They are full-size blankets and rather coarse in weave. They are sometimes called Shalako blankets, though their use is not restricted to that ceremony. Because of the introduction of commercial blankets by the railroad in the 1880's; and because old people have been buried in their black blankets, hand-woven examples of this type are today excessively rare. None has been produced—as far as we know—for at least 50 years, though there are weavers alive who formerly made them. All black blankets worn today are factory-made.

10. HOPI CHECKERBOARD BLANKETS (L). These are made in black and white—with an occasional one in brown and white; or brown, black and white—in complex diagonal and diamond weaves. They have groups of light and dark stripes crossing each other at right angles in the general manner of a Scotch plaid. In addition the surface is covered with sections of diamond and chevron weaves. They are made only by the Hopi in sizes varying to fit persons of different ages; and are worn by men and boys. The specimen shown is a very small one for a little boy.

For little boys, brown blankets with groups of white stripes running along the long sides, are made (L 2).

Formerly only naturally colored black wool was used in these blankets because black dye had to be boiled and articles with boiled dyes could not be taken by the dead into the next world. Only textiles made of naturally colored materials, or those dyed with unboiled dyes such as indigo could be used in the next world. These ideas about dyeing apply to other types of clothing.

11. NAVAHO STYLE BLANKETS. The modern Hopi make a certain number of blankets with designs adapted from the Navaho. Some imitate the Navaho man's blanket—commonly called the “chief blanket”—with its broad light and dark stripes running the length of the piece. Sometimes simple large diagonal patterns in another color are made to cut across the striped background. An occasional piece is made which is a rug for floor use rather than a blanket. One made 40 years ago by a blind Hopi weaver has a border, and designs made up of triangles which could not be distinguished from a Navaho piece. Another I have seen has a design representing the mask of a kachina or minor god woven into it. But these last two are decidedly freakish and do not represent a common type. Today a number of small floor rugs, based on the Navaho saddle blanket, are made by the Hopi. Though made as blankets many of these Navaho style pieces are so heavy as to be better suited for use as rugs.

11. WOMEN'S DRESSES AND SHAWLS. The standard woman's dress in the Pueblo area is a piece of wool cloth (K) with a black or dark brown diagonal weave center and wide bands of blue figured weaving—usually diamonds—on the long edges. Many examples of this type have red and green cords outlining the top and ends of the diamond weave side bands. These are not put in by the weaver but by the owner when she begins to wear the dress. At Acoma she removes these cords when she discards the dress. The Hopi do not use the cords if the garment is to be worn as a shawl (see end of paragraph). I have no data as to whether these two customs were general among the Pueblos; but it seems likely. When worn the dress is folded once across the width and placed on the body so that the fold comes under the left arm and the edges on the right side. The upper corners are caught over the right shoulder and the edges held together with a belt. The size depends on the size of the wearer, for these dresses are made for everyone from tiny girls to stout old ladies. In any case the dress reaches from the neck to somewhat below the knees. Until fairly recent times these articles were also worn as shawls draped over the head and shoulders.

Though the blue edges are usually in a diamond weave they may be plain or zigzag. At Zuni the dresses are frequently dyed solid black; and at Acoma, Laguna and a few other places the dresses were redyed from time to time to freshen up the black, thus almost obscuring the bright blue of the edges.

The dress-shawls at Zuni, Acoma, Laguna and several Tewa towns north of Santa Fe were trimmed with embroidery on the long edges instead of having the woven blue edge. The Zuni pieces (J: 96-97; M) have only dark blue embroidery—there are a few odd pieces with red—in rather narrow bands. The other type (A: 89; A) has much wider bands of embroidery in several colors. Red and blue are the most common, with green much less so and yellow very rare. Ordinarily shawls to be embroidered were woven with a

plain instead of a diamond edge. But some diamond edge dresses are embroidered, the decoration being placed above the upper edges of the diamond sections (D).

A few plain medium brown examples exist, apparently made by the Hopi and Zuni. Those I have seen have no decoration. They are said to be used for burial, but this is not certainly known.

At Laguna a special type was made (91; A). It had a white center in diagonal weave, rather narrow side bands in blue diamond weave, and on the latter three blocks of parallel red stripes. One example at least is known, the appearance of which checks exactly with that given independently by several aged Laguna people.

Women dancers in the Hopi Marau ceremony wear a poncho-like shirt made of two shawls with solid blue centers and red side bands.

12. MEN'S SHIRTS. These are of two types. One is solid black or blue (Q: 90; G: 96-97; I) while the other has horizontal red stripes in various combinations (O). Both are woven in three pieces which are later sewn together. The large piece is a long oblong with a neck hole. This covers the back and chest. The sleeves are oblongs (91; D) or truncated triangles (92-93; I) which are sewn to the large piece at the shoulders. The edges are not sewn, tie strings being used. Some of the striped examples have no sleeves.

13. BREECH CLOUTS (N: 96-97; H). These are about 40 x 16 inches in size, with smaller dimensions for boys. They are all dark blue or black but show several types of decoration. I have seen one with blue diamond ends and pairs of red stripes near the ends (N); another with blue center, black diamond ends and widely spaced black stripes; and a third with very dark blue center and wide ends in black diamond weave. (96-97; H). The Hopi sometimes sew on parallel strands of red and green yarn. Solid color is also used. The Hopi breech clouts only in ceremonies. The Hopi make breech clouts to be used as burial garments at Isleta Pueblo.

At Zuni some of the clouts were embroidered on the ends with the same dark blue as is used on the dresses.

14. MEN'S KILTS (M) are long oblongs of black or dark blue cloth 16 to 18 inches wide and of varying lengths to fit different sized people. A 40 inch length is about average. I have only seen examples in solid color, but know that at Zuni some were embroidered on the short ends with the dark blue designs peculiar to that Pueblo.

15. BROCADED SASHES (P) are 5 to 6 feet long, exclusive of the long end fringes, and 6 to 8 inches wide. They are white with 6 to 10 inches of brocading in several colors at each end. The design is highly standardized, being always the same as that shown in the cut, with a few very minor internal variations. The design is a conventionalization of the mask of the Broad-faced kachina. The technic of making these sashes is fully described in reference 2. They are worn around the hips of men dancers in the ceremonies of many Pueblos.

16. WOMEN'S BELTS (B, C) are 5 to 7 feet long and 3 to 5 inches wide. They are almost invariably red with side stripes in other colors and a band of raised designs, usually groups of small triangles, down the center. Red, black

and green, red, black and white, red and black, white or green alone are the common combinations. They are made today by the women of many Pueblos. Related in technic and design are hair binders about 1 x 18 inches (91; G); and garters, made in pairs, about 3 x 15 to 18 inches (91; F).

Reference 5 describes Hopi belt weaving in great detail. It shows that there are two distinct types from the technical point of view. One, usually red, black and green, has a band of floated warps down the center bearing a continuous row of black designs. The other, usually red, white and green, has a series of separate designs in white, also made by warp floating. In the first type both background and designs are floated; while in the second only the background is floated. Each type has its own heddle rig, the second type having two supplementary heddles to control the warp floating.

17. KNITTING (H, I: 96-97; C) was widespread among the Pueblos and Navaho and still is done to a considerable extent. It appears to have been introduced by the Spanish, though this is by no means certain. Four needles are used and rather complex close and openwork technics (H) have been developed. The most common product of the knitter is the tight fitting legging covering the calf only (I). Black or dark blue are the common colors, with some work in white.

At Zuni ankle height socks (96-97; F) were knit in complicated checkerboard patterns.

Compiled by F. H. Douglas from his field notes, study of the great collections and the following references:

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1. The arts and crafts of the Hopi Indians—M.-R. F. Colton. Museum Notes, Vol. 11, no. 1. 1938.
2. Notes on Hopi brocading—F. H. Douglas. Museum Notes, Vol. 11, no. 4. 1938.

UNITED STATES NATIONAL MUSEUM

3. The Hopi Indian collection in the U. S. National Museum—Walter Hough. Proceedings, Vol. 54. 1919. Diagrammatic drawings of many types of specimens.

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4. Zuni weaving technique—Leslie Spier. Vol. 26, no. 1. 1925
5. Notes on Hopi belt weaving of Moenkopi—Kenneth MacLeish. Vol. 42, no. 2. 1940.

BUREAU OF AMERICAN ETHNOLOGY

6. Manuscript on Pueblo Clothing—Matilda Stevenson. 1910.

COLUMBIA UNIVERSITY

7. Hopi Journal of A. M. Stephen—E. C. Parsons, ed. Contributions to Anthropology, No. 23, 2 vols. 1936.

Thanks are due to Mrs. Harold Colton and Dr. Harry Mera for suggestions.

1954 CONDITION. Since 1940 both weaving and use of native woven articles have steadily declined. The Hopi are still quite active weavers, but Zuni weaving is apparently dead except for belts. Use of ceremonial woven objects, made mostly by the Hopi, is still common.

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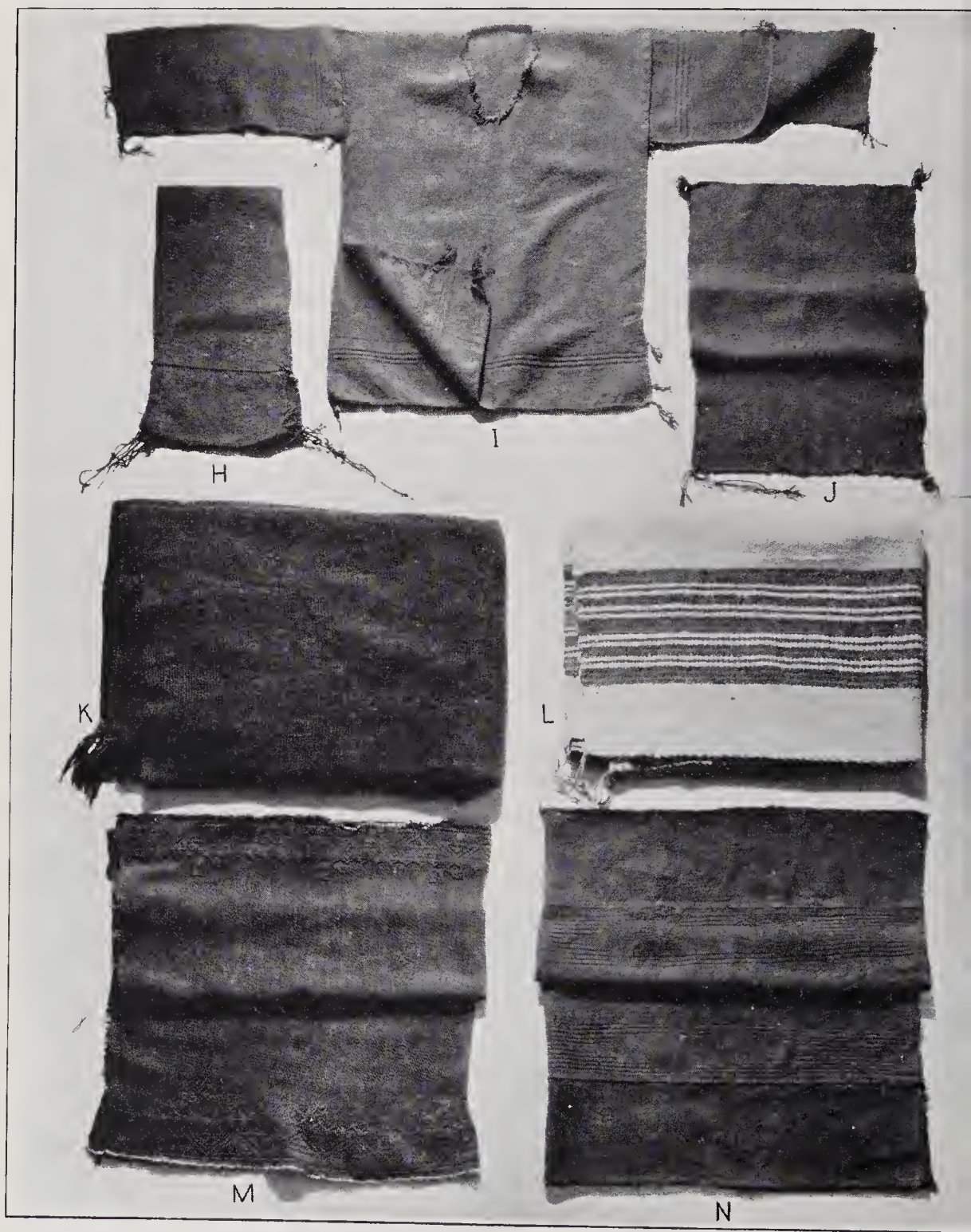


Weaving at Zuni Pueblo

LEAFLETS 96-97

FEBRUARY, 1940

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1. ZUNI (Zoo-nee) is the main pueblo or village of the tribe of the same name. It is located 42 miles south of Gallup, New Mexico, very near the Arizona-New Mexico border slightly north of its center. There are four smaller villages, Ojo Caliente, Tekapo, Nutria and Pescado, located within a 20 mile range of the main town. The total population of the tribe is 2180. The present town of Zuni was established in 1695 on the site of Halona, one of the Seven Cities of Cibola discovered by the Spanish in 1540. The language spoken is the only member of the Zunian linguistic family, though there are indications that it may ultimately be found to be related to the other Pueblo languages.

2. PUEBLO WEAVING began in the 8th century, A. D. The oldest piece dated by the tree ring calendar bears the date 758, A. D. Weaving on the true loom appears somewhat suddenly among the Pueblos. It has not yet been determined whether it was invented by them or introduced from Mexico. Since this beginning weaving has been carried on continuously in cotton; and in wool since the introduction of sheep by the Spanish in the 17th century. For several generations it has been dying out, now surviving as a major craft only among the Hopi and Zuni, with occasional occurrences elsewhere. See Leaflets 18, 89-95.

3. ZUNI WEAVING HISTORY is largely unknown. As to its beginnings and prehistoric course we have no knowledge because of the lack of archeological investigations. One of the early Zuni villages, Hawikuh, lasted till near the end of the 17th century; and from its ruins have been taken pieces of plain cotton cloth. This find supports Spanish statements that weaving was done in the Zuni towns. But for the following 200 years we have no information beyond occasional references in old chronicles. In 1879 James Stevenson came to Zuni to collect for the Smithsonian Institution. Since then various anthropologists and others have studied the subject and accumulated considerable information. Much of the information to follow was obtained in 1935 and 1936 from a number of weavers at Zuni.

4. SEX OF WEAVERS. Contrary to the common Pueblo practice most Zuni weaving has been done by women, at least during the period of modern study. Some men weave and many seem to be perfectly familiar with the process. The same general situation is found in regard to embroidery.

5. LOOM AND EQUIPMENT. The loom is the same simple vertical device as is used by the Navaho and Hopi and other Pueblos who formerly wove. Two details set it slightly apart from the loom of the Navaho. The Zuni loom is set up indoors; and the Zuni keep the edges of the cloth straight while being woven by fastening a measuring rod across the warp and moving it upward as weaving progresses. All types of Zuni looms are fully described in reference 3.

6. WEAVING TECHNICS are the same as at other Pueblos. Plain, diagonal and diamond weaves are made. All are described in reference 3. Leaflet 3 describes the general process of plain weaving.

7. BELT WEAVING. Women's very long and rather narrow belts (E) are woven on two types of loom. In one the warp is wrapped around two poles to form a continuous band. As the weft is inserted this band is slipped on the poles to keep the working edge within convenient reach of the worker. The weft is inserted in all but about a foot of the warp. This section is cut in the middle, each half forming the fringe at one end of the belt. The weft is in-

serted with the aid of stick heddles. The other loom has the warps stretched between some fixed point and the waist of the weaver; and has a reed heddle for manipulating the warps. The reed heddle was in use as late as 1916. I have no later data.

These belts differ from blankets and other textiles in that in them the warp alone is visible; while in blankets it is the weft which makes the surface; and in dresses and other wool or cotton articles both warp and weft are seen. What is said here about Zuni textiles applies equally well to the work of other Pueblos.

8. KNITTING. Two types of woolen articles are produced by this technic; tight black or blue leggings covering the calf (C); and ankle height socks (F). The leggings were made unusually tight so as to restrain the growth of the calf. The socks seem to have been restricted to Zuni. They showed a many-colored design of small blocks. They are no longer made as a regular practice. The pair on the cover (F) was made recently by a man who once had specialized in their manufacture. In knitting, 4 needles are used to produce a considerable variety of complex stitches. Knitting was done by men only.

COTTON

9. CULTIVATION. Cotton was grown in chile pepper fields and anywhere where irrigation was possible up till somewhere near the end of the 19th century. The seed was planted in July and the crop was gathered in September.

10. PREPARATION. Seeds and dirt were removed from the bolls with the fingers which were also used to roughly straighten the fibres. Commercial carding combs were used to complete the untangling process. What was used before cards set with steel wire became available is not known. Cockle burrs mounted in a frame offer a possible answer.

The carded rolls of cotton are spun on a simple spindle, a slender rod 16 to 18 inches long and slightly tapering from a bluntly rounded butt to a fairly sharp point. A wooden disk 3 or 4 inches across is slipped on the shaft to a position near the base. The point of the shaft is stuck into a roll of carded cotton. The shaft is rotated on the thigh or with the fingers of the right hand while the left draws the roll away from the point. Reference 3 discusses these details at some length.

11. ARTICLES MADE. The largest product of the cotton weaver is the woman's white shawl with colored wool embroidery on the top and bottom edges (A). It averages about 3 x 4 feet in size but may be larger. The location of the embroidery bands and the general character of the designs may be seen from the photo. The use of colored medallions on the lower bands is said by old embroiderers to be rather recent, plain black having been the rule formerly. Zuni shawls generally have the triangles atop the lower band in groups of two instead of the threes made elsewhere. Besides the embroidered shawls there are those with bands of color woven on the long sides. One type, apparently the older, has wide blue edges only, the blue being woven in a diamond weave in wool (92-93; F). The more common type has broad red and blue edges (90; F 92-93; E), the blue being diamond weave and the red diagonal. The center is white in a diagonal weave, though some seem to have been made in plain weave.

Kilts (D) worn by men dancers were and are made. They are about 36 to 40 x 16 to 18 inches in size and have bands of wool embroidery on the short sides. The photo shows the usual standardized design. These are just like

the kilts made elsewhere among the Pueblos. The Zuni claim that theirs have a black knitted band along the bottom, trimmed with widely spaced black squares. The Hopi deny this, making further investigation necessary.

The wide white braided ceremonial sash (B), is still made at Zuni.

In addition to the articles described above, the Zuni of 1879 and thereabouts said that formerly they had made men's shirts and breech clouts; and dresses, belts and hair ties for women. None of these old pieces is known today.

WOOL

12. PREPARATION. The wool is clipped with commercial shears by men. The women wash it with yucca root in cold water. Carding and spinning are done as with cotton. Grey wool is made by carding white and black wool together. As the yarn is spun it may be scraped with a corn cob.

13. DYES. By 1904, when native dye methods were first carefully studied, knowledge of them had largely gone, only a few formulas being remembered. Flowers of the thistle, *Psilostrophe tagetina*, or rabbit-weed, *Bigelovia*, were used for yellow. Blue came from imported indigo. Green was made by dyeing the wool yellow first with native dye and then dipping it in indigo. A red-brown was produced with coreopsis flowers. The black dye is still used. It is made with the bark of sumac, *Rhus*, combined with ground-up rock containing sulphates of iron, aluminum and magnesium. Native alum was the common mordant. All dyeing was done by boiling except in the case of indigo.

WOOL ARTICLES MADE

14. BLANKETS. (K, L) There were two types of blankets. One was solid black and was worn by men spectators and participants in ceremonials. The making of black blankets ceased about 1885-90 with the wholesale introduction of commercial products. Old people were buried in black blankets and as no new ones have been made they have become excessively rare. These black blankets were made only at Zuni. They are not to be confused with the smaller and thinner black shawls and dresses used generally by Pueblo women. The few black blankets known are very coarse in texture and are large enough to enwrap a standing man completely. The other type of blanket is usually white with various combinations of narrow stripes in brown, black or blue (L). Some had a blue and black striped background with a few white stripes. In general these striped blankets resemble those made in many Pueblos. There are two features which apparently are distinctive for Zuni blankets. They are said by old weavers to be more nearly square than those from other towns; and they appear to be consistently coarser, thicker and fuzzier than those made elsewhere. The few blankets which are certainly Zuni back up the assertion about squareness. But the old weavers said that a tendency to squareness was not consistently followed. So all that can be said is that any coarse, thick white blanket with stripes and a rather square shape is probably Zuni. As far as could be discovered neither type of blanket is being made today, though there are plenty of weavers who could make them.

15. WOMEN'S DRESSES AND SHAWLS. (M, N) Here again there are two types. Both are black or very dark brown and are made in a diagonal weave except for the long sides. The difference comes in the treatment of the long sides. The older and more characteristically Zunian type has these sides embroidered in dark blue (M). The more recent type has sides in a diamond weave (N). The latter type is that found commonly throughout the Pueblo region. Both are rectangles with an average size for adults' dresses of 40 x 50

inches. But they are made to fit women and children of every shape and size. Both types were worn around the body as dresses; and over the head and shoulders, or shoulders alone, as shawls.

The embroidered type has about 3 inches of plain weave along each long side over which the embroidery is placed (M). The designs are very standardized, there only being 3 or 4 patterns. They are simple geometric figures, or highly conventionalized butterflies. Along the top, or inner edge, of both bands are set, at 6 or 8 inch intervals, little conventionalized flowers which show Spanish influence. There is usually a very narrow band of embroidery along the short sides also. A very few Zuni dresses show red embroidery. Embroidered dresses are no longer made at Zuni though there are people who can make them. They are now worn only on ceremonial occasions, having been replaced for everyday use 40-50 years ago by the diamond edge type.

The diamond edge type (N) is just like that found elsewhere in the Pueblo area except that there is a strong tendency at Zuni for the diamond section to be black instead of blue, as among the Hopi. Blue was sometimes used but black has been increasingly common. All examined on Zuni women were black. The diamond edges are about 6 inches wide. As a supplementary decoration there may be a band just above the diamonds which shows a few rows of deep corrugations woven in the fabric. This technic is not restricted to Zuni, but is common there.

A weaver observed at work stated that she used 4 balls of black wool, each 6 to 7 inches in diameter, for the body of the dress; and 2 balls for the diamond edges. She took about 4 months to weave a dress, working in her spare time.

16. MEN'S SHIRTS (I) were made in three pieces; a long rectangle to cover the back and chest, with a hole cut for the neck; and two sleeves, truncated pyramids with the base of each sewn to the shoulder. The edges were not sewn up, but fastened with ties. All were in a diagonal weave, with black or dark blue as the colors. From the evidence of old photos—no actual shirts were seen—it would appear that Zuni shirts were just like those made by the Hopi.

17. KILTS were of two types, one with blue embroidered ends and the other without decoration (J). Diagonally woven blue or black cloth was used. The kilts were about 16 to 18 inches wide and of varying lengths to fit different waist sizes.

18. BREECH CLOTHS were also made in two ways, some with blue embroidered ends and others with diamond weave ends (H). They were about 40 x 16 inches, with smaller sizes for boys. Information is lacking as to whether they ever had the colored striping seen on Hopi examples.

19. BROCADED SASHES (G) are 5½ to 6 feet long—made in two pieces—and 7 to 10 inches wide with fringes on the short ends. They are white or cream with a section of colored brocade at each end. They are usually made of wool, though sometimes of cotton. The design found everywhere among the Pueblos is shown in the photo. It represents the mask of the Broad-face kachina as far as the Hopi are concerned. No information is available as to any explanation of the design at Zuni.

Brocading and embroidery are often confused. The former is done on the loom and produces narrow parallel bands on the back (left side of G). Embroidery is done with a needle after weaving is finished and shows small irregular spots of color on the back.

There is at least one living weaver at Zuni who has made brocaded sashes. They are worn by men dancers at many Pueblos to hold up the embroidered cotton kilts described in section 11.

MILKWEED COTTON AND YUCCA TEXTILES

20. MILKWEED. Reference 1 discusses at some length the making of thread from the cotton of this plant, *Acerates angustifolia*. The cotton was picked from the pods, worked into fluffy masses with the fingers and deposited on a blanket. There it was whipped to separate the seeds. It was spun like cotton. It was then woven into; "a good substantial cloth closely resembling if not identical in appearance to the genuine cotton." In 1910 milkweed cotton was being made into cord for ceremonial use. Reference 1 supplies this information.

I have never seen cloth made with this material and can add nothing to the above.

21. YUCCA. The new leaves of *Yucca baccata* were boiled with wood ashes, and chewed to remove the pulp so that the fibres could be separated. They were then dried and tied in bundles till needed. Before spinning they were soaked in water and rubbed and pulled until fluffy. This fluff was spun and woven like cotton or twisted into cord. I know of no examples in existence today and have no information later than 1910. Spun yucca fibre was formerly used by the Hopi to make rabbit snares.

23. CEDAR BARK AND BUFFALO WOOL are mentioned in reference 1 as having been used in textile work. The wool was woven and the bark used "for decorating the fabrics," apparently by weaving it into cotton so as to produce a design. The inner bark of the red cedar was used. No information other than the above is available.

24. EMBROIDERY MATERIALS. Bayeta, the Spanish word for the wool cloth we call baize, was raveled by the Navaho and Pueblos for use in weaving and embroidery. It was usually red, a color not obtainable with native dyes. Bayeta from England was being used at Zuni as late as 1881.

Machine-made wool yarn, usually called Germantown, first reached Zuni in or about 1879. At first it was used only for weaving belts and other narrow bands. But eventually it came to be used for embroidery. It is the only material so used today.

Compiled by F. H. Douglas from his field notes, studies of the great collections, and from the following sources:

BUREAU OF AMERICAN ETHNOLOGY

1. Pueblo Indian Clothing—Matilda E. Stevenson. A manuscript written in 1910. A mine of information about all sorts of weaving processes, types of clothing, the manufacture of shell and silver jewelry and the like. There are copies at the Denver Art Museum, the Laboratory of Anthropology in Santa Fe, the Museum of Northern Arizona in Flagstaff, and the Universities of New Mexico and Arizona.
2. The Zuni Indians—Matilda E. Stevenson. 23rd Annual Report for 1901-02. 1904

AMERICAN ANTHROPOLOGIST

3. Zuni weaving technique—Leslie Spier. Vol. 26, no. 1. 1924. Drawings of the Zuni loom and weaving processes; and descriptions of the preparation of wool and cotton.

Thanks are due to Mrs. Harold Colton and Dr. Harry Mera for suggestions.

DENVER ART MUSEUM

1300 LOGAN STREET, DENVER, COLORADO

DEPARTMENT OF INDIAN ART

RICHARD G. CONN, CURATOR



Main Types of Basketry in Washington and Northwestern Oregon

LEAFLET 98

FEBRUARY, 1940

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1. INTRODUCTORY. In Oregon and Washington is found a bewildering number of Indian tribes whose names and manners of life are little known to any but a few specialists. Over 100 separate groups, belonging to half a dozen linguistic families, are listed for the two states. All of these tribes are basket-makers. While there are not as many basket varieties as there are tribes there is a rather wide range of types. This leaflet attempts to indicate the main divisions of basketry in part of this area, with little or no consideration given to tribal differences.

2. THE CASCADE MOUNTAINS form a natural barrier which is a very important factor in Indian life in Washington. It divides the state into two sections, a western quarter and an eastern three quarters. The tribes to the West are immensely influenced by the Pacific; while those in the East are mountain and plains people.

3. THE COLUMBIA RIVER is another natural influence of great importance. For it provides a link between East and West and an avenue for intertribal trade and influences. Any detailed study of the basketry of this area must give much consideration to these two natural features, the great river and the mountains.

4. TRIBAL MARRIAGE CUSTOMS had a bearing on the very mixed state of basketry in this area. For here, to a considerable extent, it was the custom for women to marry outside of the local group. This meant that women who knew their own tribal style of basketry were constantly carrying these ideas among other tribes.

5. OREGON BASKETRY falls into two main geographical divisions, separated by the Cascade mountains. Only the western section is dealt with in this leaflet. The other section falls in with the Plateau section of the United States and its basketry will be treated along with that of the other interior tribes in a future number of this series.

6. NINE MAIN TYPES of basketry are found in Washington and western Oregon, each with many subdivisions. The following sections of this leaflet will be concerned with descriptions of the major details of each type. See Leaflet 67 for more details about coiling and other construction technics, and Leaflet 68 for detailed description of imbricating and other decorative technics.

7. IMBRICATED COILED BASKETRY (H, I) is made on both sides of the Cascades in Washington. There are two main subdivisions, based on shape. East of the Cascades the baskets are round, tall, slim and slope straight from the small bottom to the larger top (I). West of the Cascades the baskets are ellipsoidal (circles with two opposite sides flattened), much less tall and slim than those west of the Cascades, and have sides rounding up from the small base to the larger mouth (H). This basketry is very tight and strong. The best examples are so hard as to suggest wooden vessels.

Both types are made by coiling and are decorated by imbrication. Coiled baskets have a continuous coil starting in the middle of the bottom and rising to the rim. Their sides have horizontal corrugations. Imbrication comes from the Latin word *imbrex*, meaning "tile". It is used because this method of decoration produces a series of decorative stitches which overlap like the tiles or shingles on a roof.

The coils are made of bunches of finely split cedar roots, *Thuja plicata*, sewn with larger sections of the same material. The imbricating is done with stems of squaw grass, *Xerophyllum tenax*, or with cherry bark, *Prunus emarginata*, or the rhizomes, or root-like stems, of horsetail, *Equisetum*. The grass is used in its natural white or dyed yellow with wolf moss, *Evernia vulpina*, or Oregon grape, *Berberis*. The cherry bark is a natural red-brown, and the horsetail is dyed black by soaking in mud. Also naturally red-brown cedar bark is used.

Very large, bold single or multiple zigzags make up most of the designs. There are also triangles, diamonds, diamond nets and occasional rectangular designs. All designs show a wealth of small detail.

All of this basketry is commonly called Klickitat (Klick-ih-tat) after the name of one tribe which makes it. Actually only the tall round shapes are made by the Klickitat, Yakima and some of their neighbors east of the mountains. The other variety is made by a number of small tribes of the Salish (Say-lish) linguistic family west of the Cascades. Some of the best known of these are: Cowlitz, Muckleshoot, Puyallup, Nisqually and Snqualmi. Leaflet 32 shows a map of these tribes.

In the light of present knowledge it is impossible to tell the work of one tribe from that of another.

8. WRAPPED TWINED BASKETRY (L, N, O, P) is produced by a number of tribes in the extreme northwest corner of Washington and along the Pacific coast of that state.

Twined basketry has vertical ribs which are bound together by pairs of wefts twisted around and between them. In wrapped twining one weft is stiff. The other is flexible and is wrapped around the crossings of the warps and the stiff weft. This technic produces different surfaces on the exterior and interior. On the outside appear rows of diamond-shaped stitches; inside there are horizontal corrugations resembling those of coiled basketry.

The base of the basket shows either plaited red-brown cedar bark strips or twined pale yellow-green stems of a rush, *Juncus*. The warps and stiff weft are cedar bark and the flexible weft is white squaw grass, *Xerophyllum tenax*.

The vast majority of the baskets show a shiny white surface on which appear, in bright colors, little birds, animals, whales, canoes and various simple geometric figures. The most common shape is a round box, usually small, with a flat lid (L, N). Some boxes are oblong with rounded corners, a flat shoulder and a lid raised above the shoulder (P). There are also shapes like that shown at O, and almost flat oblong wallets.

This basketry is made by the following tribes running from Vancouver Island south along the Pacific coast: Nootka, Makah, Quileute and Quinault. The work of these tribes is indistinguishable except that it gets coarser as one moves south. This basketry is usually referred to as West Coast basketry, or Makah basketry.

9. STIFF OVERLAY TWINED BASKETS (B) are produced by the Quinault, Chehalis and Chinook in southwestern Washington. In its basic construction overlay twining is just like the plain twining defined in section 8. It is called overlay because when a design is to be placed on it extra wefts of a different material are laid over the construction wefts and twisted into the fabric as work proceeds so as to produce a design.

These Quinault stiff baskets are made of brown spruce roots and the overlay designs are made with pale yellowish-white squaw grass. The loops on the rim are very typical not only of this kind of basketry but of the whole region, being found there almost exclusively.

This type of basketry may be recognized by its stiffness, round, deep shape, brown color with light glossy designs, and, frequently, rim loops. The designs belong to the bold zigzag or over-all netting type so common in the whole region.

10. SOFT OR FLEXIBLE TWINED BASKETRY (G, J, R) is highly developed and widely spread in the area west of the Cascades. Two technics are used, overlay twining and wrapped twining, both already described in this leaflet. The wrapped twine type is made from the Quinault south along the coast to around the mouth of the Columbia and inland in the region south of Puget Sound. It differs from that described in section 8 in several ways. Instead of little round boxes with lids there are rather deep wide mouthed bowls and fairly straight sides rounding at the bottom (R). The exterior surface is standard for wrap twining. But the interior is different. For beside the standard horizontal corrugations there are often sections showing several of the flexible wefts carried diagonally across a number of warps. J shows this.

Both cedar bark and cattail are used in the construction, either one or the other, or both. The wrapping is done with squaw grass, the shiny surface of which covers the exterior of the baskets. The design style is indicated by R. The common colors are black and a yellow-orange, though aniline red and green may be used. The yellow dye comes from Oregon grape and the black from mud.

This basketry is—or was—made by the Chehalis, Cowlitz, the various small tribes between the Chehalis and Quinault, and the several Chinook groups around the mouth of the Columbia.

The overlay twine type is produced by the Skokomish along the western side of Puget Sound (G). Cattail is the common material for construction and the overlay is squaw grass. The usual shape is a tall round one with almost vertical sides, bottom and top being about the same size. The baskets are soft and flexible. The rim usually has the loops shown in the photo. The colors are as in the wrap twine type described in this section. Little animal figures just below the rim are very typical of Skokomish basketry.

11. CLAM BASKETS (T) are made generally in the region west of the Cascades. The material is brown cedar root. There is no decoration. The clam baskets of all tribes making them are identical as far as our present knowledge goes.

12. COARSE PLAITED BASKETS (K, S, Q) of three kinds are made in the Puget Sound region. The first, (Q), is made of cedar wood splints and has no decoration except the rim loops. K is made of cattail with some squaw grass overlay. Both are rough work baskets with no pretensions of quality.

A third plaited type, from the Pacific coast tribes, is shown by S. It is made of strips of cedar bark. It shows a combination of plaiting and twining, for there is a row of twining between each pair of horizontal plaiting members.

13. TWINED "SALLY BAGS" (E, F, M) are produced by a number of tribes on or near the Columbia River between the Cascades and the great northward bend of the river. The popular name applied to the type is given above. These are cylindrical—or near cylindrical—rather deep flexible bags with more or less flat bottoms. They are all made by simple twining with decoration applied by wrap twining. The warps are Indian hemp fibre (*Apocynum cannabinum*) or commercial twine and the decorations are made with corn husk or commercial wool threads. In the field of color and design there are two types. One (F, M) has a light greyish brown background with designs in dark brown. The designs on recent Wasco and Wishram bags show conventionalized birds, fish, human figures with strange skelton-like bodies, and butterflies. Simple geometric figures appear on the older bags of this group. The other type (E) has a red-brown background on which appear the big complex zigzags so typical of the whole region. Type 2 has a rather rounded bottom and is often folded flat. Though both types are made by all tribes in the region, type 1 is usually associated with recent Wasco and Wishram, and type 2 is the older form.

14. FLAT TWINED "NEZ PERCE" BAGS (A, D). In material and construction these bags are like those described above, but in shape and method of decoration they are quite different. The entire outer surface—except near the bottom—is covered with corn husk or rush applied by false embroidery. By this technic a strand of corn husk is wrapped around each weft, stitch by stitch, on the outside of the bag, the interior being unaffected by the process. On this corn husk surface appear brightly colored geometric designs done most frequently with commercial wool threads. The designs are ordinarily single units distributed regularly over the surface (D). But some bags, possibly older ones, show all-over designs completely covering the surface (A). All are flat and rectangular in shape. There are many sizes. Usually the designs differ on the two sides.

These bags are called by the name of one tribe which makes them, the Nez Perce of Idaho. But they are generally made by the tribes of southeastern Washington and the adjacent regions. There seems to be no way to tell the work of one tribe from that of another.

15. OREGON TWINED OPENWORK BASKETS (C). A number of tribes along or near the coast of Oregon south of the Columbia River made twined baskets with hazel twigs. They resemble somewhat modern commercial baskets and thus differ from others in this region, but possess one feature which sets them apart from baskets made by Whites. This is the doubling of the handle which arches across the mouth of the basket. The two handles are not side by side but one above the other. These baskets are called Siletz, the name of a reservation where the broken remnants of many little tribes have lived for many years.

Little is known about the basketry of the Oregon coastal tribes owing to their early and rapid dying out. Reference 5 indicates that it was all twined. Much of it resembled in technic and materials the basketry made by the northern California tribes with hazel warps, conifer root wefts and white squaw grass overlay. Besides the openwork baskets described above there were in general use large burden baskets and tightly woven ones for water. Reference 5 gives such other details as are known.

Compiled by F. H. Douglas from the examination of specimens of all types in the Denver Art Museum; from conversations with Dr. Erna Gunther; and from the following sources:

BUREAU OF AMERICAN ETHNOLOGY

1. Coiled basketry in British Columbia and surrounding region—Haeberlin, Teit, Roberts and Boas. 41st Annual Report for 1919-1924. 1928

UNIVERSITY OF WASHINGTON

2. Wishram ethnography—Leslie Spier and Edward Sapir. Publications in Anthropology, Vol. 3, no. 3, 1930
3. The Quinault Indians—Ronald L. Olson. Publications in Anthropology, Vol. 6, no. 1, 1936
4. Lower Chinook ethnographic notes—Verne F. Ray. Publications in Anthropology, Vol. 7, no. 2, 1938

UNIVERSITY OF CALIFORNIA

5. Culture element distributions: VII, Oregon Coast—Homer G. Barnett. Anthropological Records, Vol. 1, no. 3, 1937

SOUTHWEST MUSEUM, LOS ANGELES

6. Cornhusk bags of the Nez Perce Indians—Anne Wyman. Leaflet 1, 1935

UNITED STATES NATIONAL MUSEUM

7. Aboriginal American basketry—Otis T. Mason. Annual Report for 1902. 1904

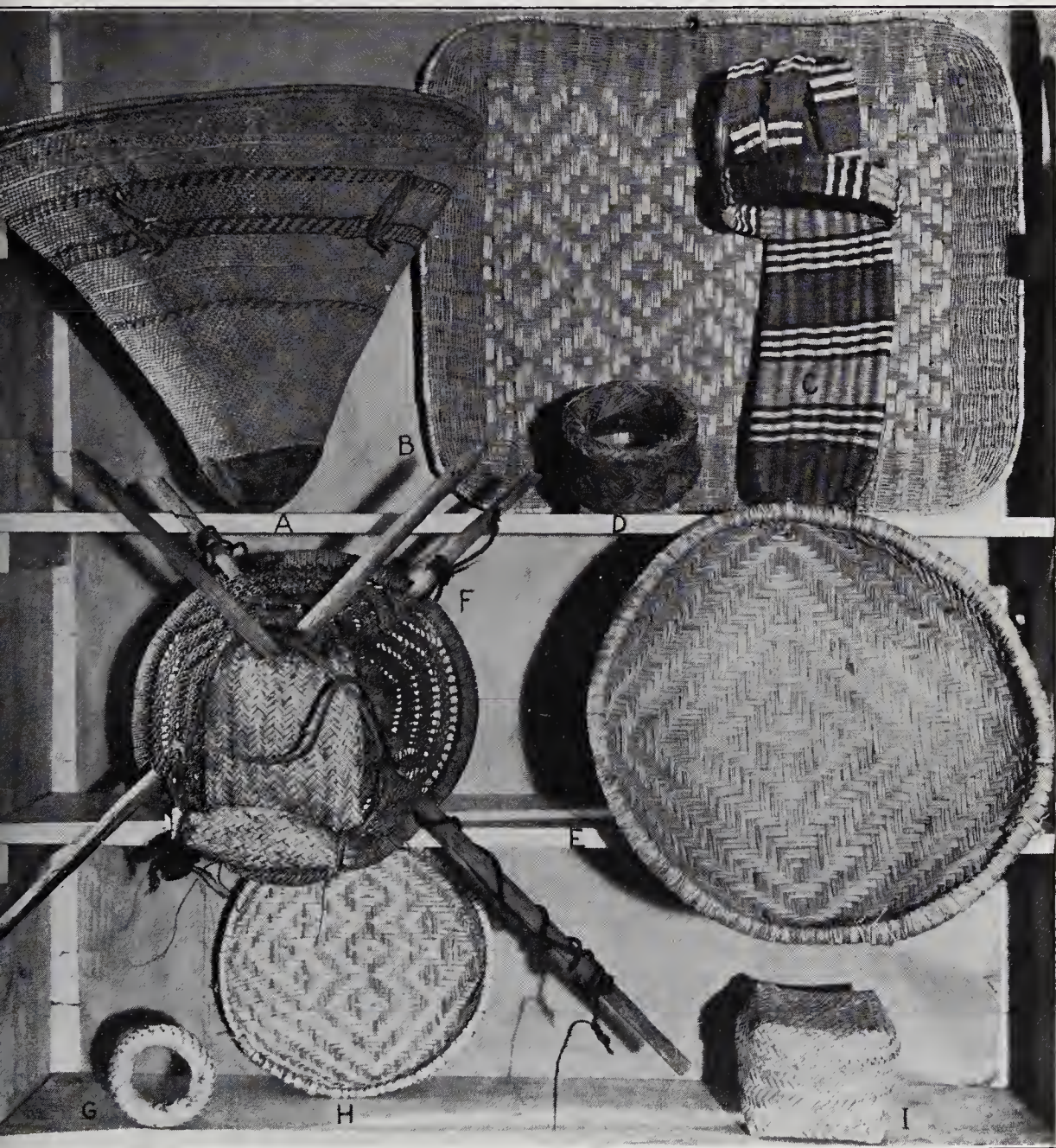
Thanks are due to Dr. Erna Gunther and Dr. Verne F. Ray, University of Washington, for great assistance in preparing this leaflet.

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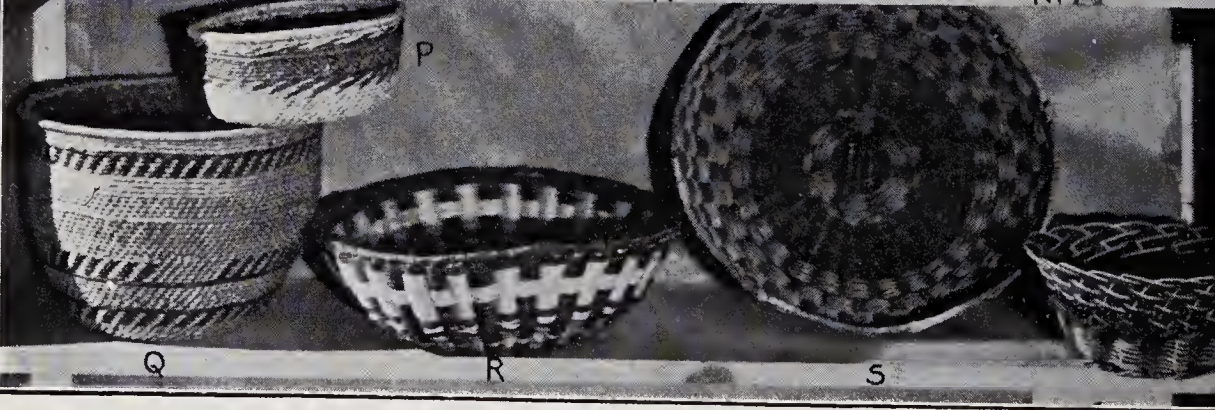
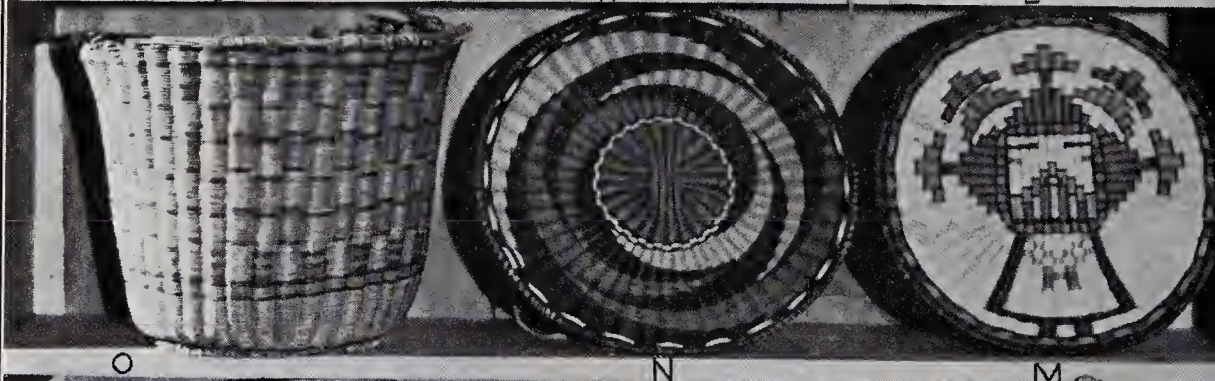
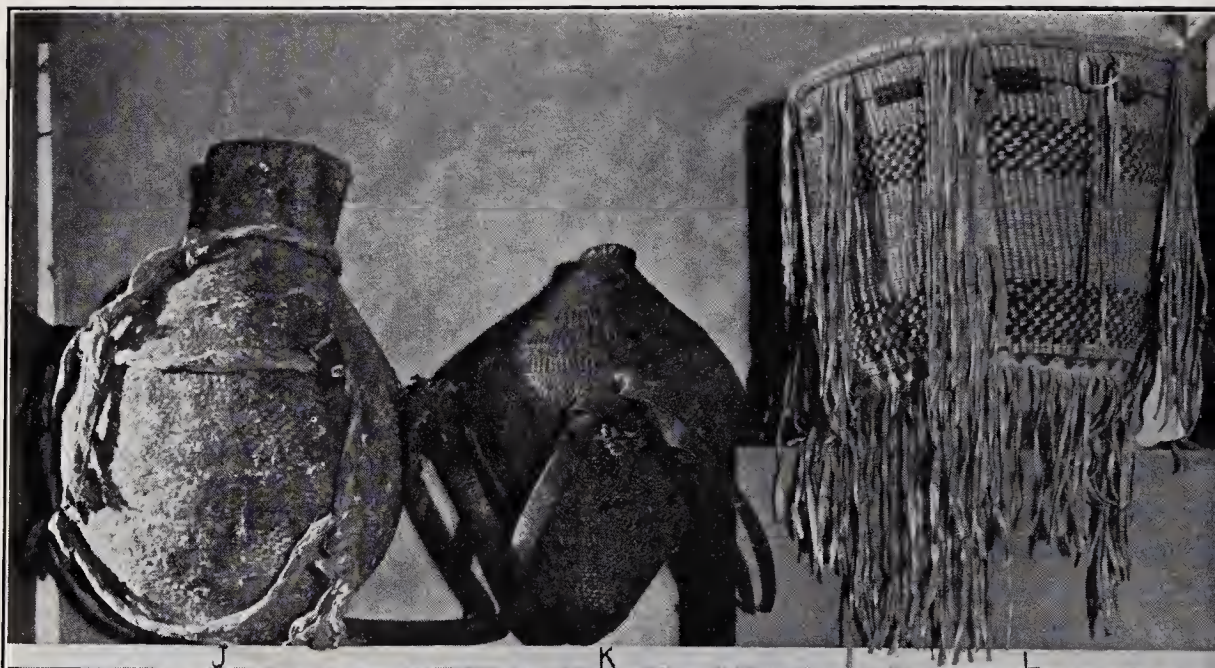


Southwestern Twined, Wicker and Plaited Basketry

LEAFLETS 99-100

FEBRUARY, 1940

Reprinted November 1968



1. INTRODUCTORY. That part of the United States commonly called the Southwest consists of Arizona and New Mexico with adjoining portions of bordering states. This area is one of the great centers of Indian basket-making and has so been for a very long period. This leaflet and number 88, which deals with coiled basketry, are attempts to indicate the main characteristics of the principal types for the benefit of collectors and students who find the multiplicity of varieties hard to distinguish.

2. TWINED BASKETRY has vertical warps or foundation elements bound together with horizontal wefts or binding elements. It can be most easily distinguished by the presence of vertical or diagonal corrugations on the fabric. There are a number of variations which are described in Leaflet 67, sections 11-17.

3. WICKER BASKETRY is like twined work in having vertical warps and horizontal wefts. But there is the difference that twining uses two or more wefts simultaneously; while wicker uses but one at a time. There may be several units in each single weft in wicker but they are used together as a unit and do not move independently. Section 18 of Leaflet 67 gives further details.

4. PLAITED BASKETRY has two sets of elements which are both active. That is, neither element is definitely warp or weft. Plaiting is done by interlacing these two sets of elements at right angles in a good many combinations. Section 19 of Leaflet 67 gives additional details.

5. TWILL OR TWILLING. These words mean the same thing as diagonal. Both twining and plaiting may be twilled; or plain, that is, moving in verticals or horizontals.

TWINING

6. APACHE (Ah-pah-tchee). Two kinds of twined baskets are made by the Apache: the pail-shaped carrying basket (L) and the pitch covered water jar or bottle (J).

The Arizona Apache make both carrying baskets and water bottles. The Mescalero of southern New Mexico make only the carrying baskets. The Jicarilla of northern New Mexico do no twining at all. Jicarilla and Mescalero water bottles are coiled.

Most burden baskets are in either plain or twill twining, or both may appear in one basket. The texture of the weaving is coarse. Some very fine examples are made in 3-strand twining. This looks just like the other varieties with 2 wefts and can only be identified by tearing down the work. But it tends to produce a smoother surface. All but some of the very finely woven examples have 4 clearly visible thick U-shaped ribs set at right angles. Some burden baskets have double rims and 2 wooden pins worked into the fabric to withstand the pull of the carrying strap. The bottoms may be either concave or convex, and in many cases are covered on the outside with leather or cloth patches. There are frequently leather fringes or broad decorative bands on the outside. There may be beads on the fringes.

The warps are usually made of the whole twigs of willow, *Salix*, or cottonwood, *Populus Fremontii*; and the wefts of split twigs from the same plants. Formerly mulberry twigs, *Morus*, were used, and very finely woven examples are likely to be of this material. Sumac, *Rhus trilobata*, is less common. It may be recognized by its red bark.

Burden baskets are commonly decorated with bands of simple geometric figures made by dyeing some wefts or by painting the designs after the basket is made. Painted designs show on the outside only. The native colors are red and black. Commercial reds, greens and blues are also used, the first being the most common.

Burden baskets of the type described above and clearly illustrated by L are made only by the Apache—except the Jicarilla—and can therefore always be assigned to that tribe. Data are lacking as to variations of the type among the different Apache divisions, except that the splints used by the San Carlos division in Arizona are broader and coarser than those made elsewhere.

Water bottles are all made in diagonal twining. Twigs of the squaw berry, *Vaccinium stamineum*, and of the sumac, *Rhus trilobata*, are the common materials, whole twigs being used in the warp and split ones for the wefts. Since these containers are covered with pitch, strength is the quality sought, not fineness of weaving. Hence the workmanship is very coarse. Waterproofing is done by melting pitch from the pinyon, *Pinus edulis*, and smearing it thickly over the surface. Some bottles have a reddish cast caused by a coating of juniper leaves pounded with red ochre which is put on before the pitch is applied. Though all shapes have fairly large mouths with tall slightly flaring necks, the body shapes fall in three groups: tall forms with slightly rounded sides and pronounced shoulders; more globular shapes with no shoulders (J); and tall hour glass forms with a constricted waist forming two rather globular sections.

Both burden baskets and water bottles have lugs to which the carrying strap is attached. On burden baskets there are two leather loops on one side about 8 inches apart and 2 inches below the rim. Water bottles have two loops of leather or horsehair near each other on the shoulder. The carrying strap rests on the upper chest and shoulders, not on the forehead.

7. HAVASUPAI (Hah-vah-soo-pie). This tribe makes three types of twined baskets, the conical burden basket (A), the shallow tray, and the water bottle (K); and formerly made a deep bowl for cooking with hot stones. The common source of the twigs used is acacia, *Acacia Gregii*, but willow and cottonwood may be used. The black designs are made with the outer covering of the hook part of the seed pods of devil's claw, *Martynia*.

The burden baskets are of the shape shown (A). Their height ranges from 14 to 24 inches and their mouth diameter from 18 to 12 inches. The nipple-like bottoms are very frequently covered on the outside with leather. Both plain and diagonal twining are used. The former seems to be more common. Both technics may appear in one basket. Lines or bands of twining done with three instead of two wefts may be used for decorative effect. After completion the side which is to rest on the back is flattened by pressure so that it will not roll. The weaving is coarse and uneven. The color is a light greyish-yellow. There are usually designs in black. These are narrow bands, a few at most, made up of extremely simple geometric figures such as triangles, zigzags, cogged lines or undecorated stripes. These decorative bands may be left out of the section which rests on the back of the bearer. There are two leather loops near each other on the flattened side 6 or 8 inches below the rim. Each loop is attached to a short stick fastened to the wall on the inside.

The trays range from 16 to 12 inches in diameter and 4 to 2 inches in depth. In construction, color and design they are like the burden baskets.

There are three shapes in the water bottle group: those with globular bodies, long pointed bottoms and very small necks (K); those with the upper half shaped like the first but with broad flat bottoms; and flat bottomed hour glass shapes. All have two lugs near each other on the shoulder. The bottles are rather finely woven with bands of both plain and diagonal twining. Curiously enough all this fine work is invisible, being covered with two coatings. The under coat is made of a yucca or soapweed paste. The outer layer is the melted pitch of the pinyon, *Pinus edulis*. The specimen shown has lost most of its pitch so that the weave shows.

8. WALAPAI (Wah-lah-pie) (P, Q). The older basket types of this tribe resemble very closely the work of the closely related neighbors the Havasupai. But there are a few points of difference. All Walapai basketry is in diagonal twining; the squaw berry, *Vaccinium stamineum*, is used instead of the acacia; and, on the basis of the few specimens available, the conical burden basket appears to be proportionately broader among the Walapai and the conical water bottle less sharply pointed. The starting knot has 6 warps instead of 4 as among the Havasupai.

In the older work there are 4 main shapes still in use and 1 which has become obsolete. The latter is the large, openwork firewood basket.

The burden baskets range from 12 to 20 inches in diameter and from 13 to 16 inches deep. A few simple bands of brown or black form the decoration. The black is from the seed pods of the devil's claw, *Martynia*. The source of the brown is not given in the references. There may be a few decorative rows of 3-ply twine or braid. The lugs for the carrying strap are like those of the Havasupai.

The trays differ from Havasupai ones in that they show no patterns, the only decoration, if any, being produced by some rows of 3-strand braiding, a technic which creates a slightly raised surface. A description of the older bowl is lacking; but it possibly resembled the modern types to be mentioned later.

The two kinds of water bottles are all in diagonal twining, lacking the variation of the Havasupai type. One form has a conical bottom and shoulders rounding up to a small neck. The other has a flat bottom instead of a conical one. Both are coated first with red-brown paint and then covered inside and outside with pitch from the pinyon, *Pinus edulis*. The carrying strap loops are of braided horsehair or yucca fibre and are placed near each other on the shoulder.

Modern Walapai basketry, made mostly for the tourist trade, is like that described above in technic and material. But it is largely made in straight sided shapes and shows decorative red and green bands made with commercial dyes. Bands of vertical zigzags, rows of chevrons and diagonal stripes and fringed lines are typical designs (P and Q). Though these baskets are made for the trade the type is not a new one, examples collected 40 years ago (Q) being of the same type. On these older baskets the background is yellow-brown instead of the whitish shade of the new pieces (P).

9. CHEMEHUEVI (Tcheh-may-hway-vee). The twined basketry of this southernmost division of the Paiute will not be considered here because, though they live in the geographical Southwest, their crafts and way of living are those of the Great Basin tribes of Utah, Nevada and neighboring states. A future leaflet will discuss the basketry of this area.

WICKERWORK

10. HOPI (Ho-pee) (C, M, N, O, R). This colorful elaborately patterned type is one of the most easily identified in America and represents the highest development of wicker basketry among Indians. This important technic is not common in America.

The warps of Hopi wickerwork are made of twigs of the sumac, *Rhus trilobata*, sometimes called wild currant; and the wefts are twigs from any one of several varieties of rabbit brush, *Bigelovia* or *Chrysothamnus*. The warps move out from a center like wheel spokes and create prominent ridges on the surface. The baskets are brilliantly colored with blues, greens, yellows, red and pink, and purple. Today these colors are obtained from native plants, though in the years around 1900 much aniline dye was used. Reference 7 lists the dye plants. Leaflet 18 gives fuller details about the technic.

The most common shape is the tray with a raised center and rim (M, N). Shallow bowls (R) are also made, as well as deep shapes for sale as waste baskets (O). The designs are as varied as the colors, showing whirling patterns (N), the figures of animals, birds and kachina dolls (M), and various geometric figures in many many combinations.

Wickerwork also appears around the edges of the plaited trays (B) to be mentioned later. Wickerwork cradles are made (C).

A coarsely made wicker burden basket is also produced by the Hopi and Zuni and possibly other Pueblo groups. They are made among the Hopi of sumac. "Peach basket" is the common name. They are narrow deep rectangles with the short ends rounded. Two heavy U-shaped rods, one near each end, are the foundations. Reference 7 illustrates one of them opposite page 13.

11. NAVAHO (Nah-vah-ho). This tribe formerly made—and still does to a slight extent—a crude wicker burden basket made of willow twigs. They are deep, four-sided affairs rising from a rather pointed bottom. Reference 5 shows a drawing of one.

12. PUEBLO (Pweb-lo) (S, T). Two varieties of wicker basketry are made in the Pueblo area. One, apparently made chiefly at Zuni, is shown by S. It is made of sumac twigs, judging by the red-brown bark. In some specimens part of the twigs are peeled thus creating simple red and white patterns. The shallow bowl is the only shape I have seen.

The other variety, illustrated by T, appears to come from the Tewa towns north of Santa Fe, San Juan especially. Many sizes are made, but there is only the shape shown. The baskets are dark reddish brown. The material is possibly sumac from the color of the bark.

The foregoing statements about these two types are not conclusive and may be wrong because there are no data available about them as far as I know. I can only say they exist and point out possibilities.

PLAITING

13. PIMA and PAPAGO (Pee-mah and Pah-pah-go). Plaiting is not widely distributed in the Southwest and is most fully developed by these two southern Arizona tribes. The work of the two is practically identical except in the matter of material. The Papago use the leaves of the sotol, *Dasylirion wheeleri*, a plant much like the yucca or Spanish batonet. The Pima depend on the

stems of the cane, *Phragmites communis*. All the plaiting is diagonal, usually over-three-under-three. Other combinations may be used. Plaiting is nearly extinct among the Pima but flourishes in the Papago country.

The principal objects made are: large flat mats for household use; rings for carrying pots on the head (D); the headband and back mat for the carrying basket (center of F); more or less cylindrical baskets for personal possessions; and square baskets for ceremonial equipment (I). The baskets have lids. The baskets are a rich grey-green when new, but fade a great deal with age. There are no designs. Reference 2 gives a wealth of detail about Pima-Papago plaiting.

14. HOPI (Ho-pee). Large flat trays, (B), are made by plaiting flat groups of several twigs of the sumac, *Rhus trilobata*. The plaiting is diagonal and produces designs of the type shown. Around the edge there may be a broad band of wickerwork, of the type described in section 10. The wicker bands are plain, as shown, or have colors and designs. These trays are used for serving piki, the Hopi paper-thin colored corn bread.

15. PUEBLO (Pweb-lo). In many Pueblos there has been made for the last 1500 years the type of plaited basket shown by E and H. Today they seem to be made principally by the Hopi and at Jemez. The only shape is that shown. The basket is made by plaiting a square mat of yucca leaves and forcing in into a stout wooden ring. The protruding edges of the mat are bent over the rim and tied to themselves with yucca strips. At Jemez the only design produced shows concentric diamonds (E). But the Hopi create a number of designs (H), sometimes using two colors, the natural green of the leaf and the white of the bleached leaf. The Hopi use both plain and diagonal plaiting.

Rings (G) for carrying water jars on the head, are also made of plaited yucca in the Pueblo area.

16. LACE BURDEN BASKETS are made by the Pima and Papago. Though technically the process used is a variety of coiling, the result has so little resemblance to common coiling that it is discussed here instead of in Leaflet 88. The example shown (F) is typical, though small. The netting within the wooden ring is made of cord made by the Papago from the leaf of the aloe, *Agave americana* and by the Pima from sotol leaves, *Dasyllirion Wheeleri*. The wooden rim is made of acacia or cat's claw, *Acacia Greggii*, and the poles of the frame from the ribs of the giant cactus, *Cereus giganteus*.

The making of the lace net is too elaborate to describe here. The technic can produce a number of complex geometric designs which are made more evident by rubbing the cords with red or blue paint after the work is complete. Reference 2 gives full details.

Compiled by F. H. Douglas from the following sources and from the examination of many specimens:

AMERICAN MUSEUM OF NATURAL HISTORY

1. Basketry of the San Carlos Apache—Helen H. Roberts. Anthropological Papers, Vol. 31, pt. 2, 1929
2. Basketry of the Pima and Papago—Mary Lois Kissel. Anthropological Papers, Vol. 17, pt. 4, 1916
3. Havasupai ethnography—Leslie Spier. Anthropological Papers, Vol. 29, pt. 3, 1928

UNITED STATES NATIONAL MUSEUM

4. The Hopi Indian collection in the United States National Museum—Walter Hough. Proceedings, Vol. 54, P. 235, 1919

THE FRANCISCAN FATHERS, ST. MICHAELS, ARIZONA

5. An ethnologic dictionary of the Navaho language. 1929

AMERICAN ANTHROPOLOGICAL ASSOCIATION

6. Walapai ethnography—A. L. Kroeber, ed. Memoir 42, 1935

MUSEUM OF NORTHERN ARIZONA, FLAGSTAFF

7. The arts and crafts of the Hopi Indians—M.-R. F. Colton. Museum Notes, Vol. 11, no. 1, 1938

MUSEUM OF NEW MEXICO, SANTA FE

8. The Jemez yucca ring-basket—Ten Broeck Williamson. El Palacio, Vol. 42, nos. 7-9, 1937

BUREAU OF AMERICAN ETHNOLOGY

9. The Zuni Indians—Matilda C. Stevenson. 23rd Annual Report for 1901-02, 1904

COLUMBIA UNIVERSITY

10. Correspondence with Dr. Gene Weltfish, 1940

DENVER ART MUSEUM

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Title III ESEA

NORMAN FEDER - Curator

TRIBAL NAMES: PART 3

LEAFLET 101

DECEMBER, 1941

Reprinted July 1967

1. INTRODUCTORY. The names by which most Indian tribes are commonly known today are not usually those applied by the tribes to themselves. The names given them are from various sources, the main ones being the following: corruptions of native names by French, Spanish, English and Americans; nicknames applied by one tribe to another; corruption of these in non-Indian languages; translations into English, often incorrect, of native names and nicknames; names in non-Indian languages which have no connection with the native name. Few tribes use these names themselves except in dealing with the Whites. The native names are usually words for "people," "men" or the like.

2. ACCURATE INFORMATION about these matters is difficult to obtain. Many of the books which discuss them were written before the study of native languages had advanced as far as it has now, with resulting mistakes about names. The information given in this leaflet has been checked by the authorities listed on the last page.

3. PLAN OF THE LEAFLET. This is the third of several numbers of this series devoted to tribal names. The other numbers in the group are 82 and 85. This number is concerned with some tribes of New York and California.

NEW YORK

4. CAYUGA (Kay-yóo-gah). An English corruption of the native name "Gah-yo-kwóo-nunh," itself a condensation of "Gah-hon-yo-gwen-hóo-nunh," meaning "at-the-place-where-boats-were-taken-out people."

5. IROQUOIS (Ír-o-kwoi). The English pronunciation of the French corruption of the name given the group by the neighboring Algonkin Indians. This Algonkin name is "Ee-reen-ah-kwah" meaning "real adders." The Iroquois had two names for themselves: "On-gwah-non-shah-nee-gay-ah," meaning "we longhouse dwellers;" and "On-gway-on-weh," meaning "real men."

6. MOHAWK (Mó-hawk). The English pronunciation of an Algonkin Indian word, varying dialectically, which means "eaters of (animate) things," and therefore presumably "man-eaters." "Mo-ho-wah-oo-uck" is the Narragansett version of this term. The Mohawk called themselves "Kah-nee-yen-gay-háh-gah," meaning "people of the place of flint."

7. ONEIDA (O-ńy-dah). An English corruption of either one of two native names for the group: "O-nén-yote-day-ah-gah" or "O-nén-yote-kay-ah-gah." Both mean "at-the-standing-stone people."

8. ONONDAGA (O-non-dáh-gah). An English corruption of the native name "O-non-dáh-gay-o-non," meaning "people on the hill (or mountain)."

8. SENECA (Séh-ne-kah). Seneca is the English pronunciation of the Dutch corruption of the Mahikan Indian translation of the name in the Iroquois language for the Oneida. This Iroquois word (see section 7) means "at-the-standing-stone people." In the language of the Mahikans, a tribe of the Hudson River valley, this name is "Ah-sin-nee-ee-kah." The Dutch pronounced this "Sinnikens" and the English twisted the Dutch version into Seneca.

The Dutch applied this Mahikan word to all of the Iroquois. As they penetrated west into New York they discovered the true names of the various tribes as they reached them. Finally only the Seneca, the westernmost group, were left and so this general name, Seneca, was finally fastened on them, though it is actually a translation of the name of another group, the Oneida.

CALIFORNIA

- 9. THE TERM "TRIBE,"** as generally understood, is not applicable to the various groups of Indians in California, with a few exceptions, for these groups had no conception of a political organization which bound its members into a unit. While the members of any one group recognized the tie of language and common customs their political organization was limited to the family or at most the village. Hence the names listed below are simply those applied to different groups of people living in one general region and speaking a distinct language.
- 10. CHEMEHUEVI** (Chim-ay-wáy-vee). A Spanish version of the name for this Southern Paiute band in the Mohave language. Its meaning is not known.
- 11. DIGGER.** This name refers to no particular tribe but has been used by Whites in relation to dozens of groups scattered all over the West. The name is a reference to the widespread custom among many western tribes of digging up various kinds of roots for food. The term was first applied to Indians in the Utah-Nevada area and later spread into California and elsewhere. Because these people were poor and unattractive they were looked down on by the Whites so that "Digger" came to be a term of contempt.
- 12. HUPA** (Hóo-pah). Derived from "hu-po" the name for the valley where the Hupa lived in the language of the neighboring Yurok. The Hupa call themselves "Nah-tin-noh-hoi," from Natinnoh, the Trinity River near which the Hupa live.
- 13. KAROK** (Káh-rok). From the expression in their own language "Kah-ruk vah-rah-rah," meaning "up river person."
- 14. MAIDU** (My-doo). A close approximation of the word for "person" in their own language. There is no distinct tribal name.
- 15. MISSION.** This name is commonly applied to the groups of Indians who gathered around the Spanish missions in southern California and were given Spanish names based on those of the missions with which each group was associated. The important groups were the Juaneno (San Juan Capistrano); Luiseno, (San Luis Rey de Francia); Fernandeno (San Fernando); Gabrielino (San Gabriel); and Diegueno (San Diego). "Mission" has also come to be applied loosely to all of the southwestern California groups.
- 16. MIWOK** (Mée-wuk). An approximation of the word for "person" in some of the dialects of the language. There is no distinct tribal name.
- 17. MONO** (Mó-no). An English abbreviation of a meaningless word applied to the group by various neighboring Indians. For example the Yokuts call the Mono "monachi;" the Miwok, "monok;" and the Maidu, "monozi." The word is not derived from the Spanish word for monkey or doll; or from the Yokuts Indian word for fly (monoyi). The Mono call themselves "noo-moo," meaning "persons."
- 18. POMO** (Pó-mo). This name is one form of an expression in the Pomo language which is not used separately, is not clearly translatable, but which is connected with such ideas as house, village, person and people. The Pomo have no distinct name for themselves.
- 19. WASHO** (Wáh-sho). This name is derived from their word for person, "wah-she-oo" or wah-see-oo." They have no tribal name of their own.

20. WINTUN (Wín-toon). Their own word for "person." There is no distinct tribal name.

21. YANA (Yáh-nah). Their own word for "person." There is no distinct tribal name.

22. YOKUTS (Yó-kuts). This name is derived from "yo-kots," the word for "person" in some of the dialects spoken by the group. The Yokuts are commonly called Tulare (too-lah-re) a name based on the Spanish word for rush. They are so called because they lived near a lake in which rushes grew.

23. YUKI (Yoó-kee). A word in the Wintun Indian language meaning "stranger" or "foe" and applied by the Americans to the Yuki. They call themselves "ah-taht," meaning "person."

24. YUROK (Yoó-rok). A simplification of the term in the Karok Indian language "Yoo-rook vah-rah-rah," meaning "downstream people." Their own name for themselves is "otl," meaning "people."

Compiled from the following sources by F. H. Douglas:

BUREAU OF AMERICAN ETHNOLOGY

1. Handbook of American Indians—F. W. Hodge, editor. Bulletin 30, 2 vols, 1907-1910. Articles by J. N. B. Hewitt containing data on Iroquois tribal names.
2. Handbook of the Indians of California—A. L. Kroeber. Bulletin 78, 1925.
3. Tobacco among the Karuk Indians of California—J. P. Harrington. Bulletin 94, 1932.

SMITHSONIAN INSTITUTION

4. Problems arising from the historic northeastern position of the Iroquois—William N. Fenton. An essay in volume 100 of the Miscellaneous Collections. 1940.
5. The League of the Iroquois—Lewis H. Morgan. 2 volume edition prepared by Herbert M. Lloyd. Dodd, Mead & Co., New York, 1922.

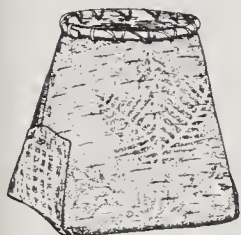
Thanks are due to Dr. William Fenton and Dr. A. L. Kroeber for assistance in preparing this leaflet.

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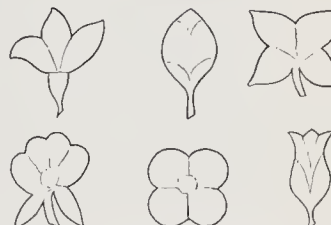
1-Mocock
Positive design.



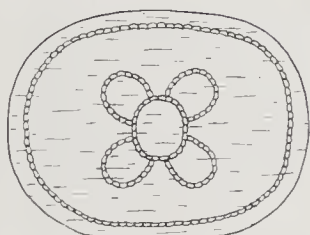
2-Mocock
Negative design.



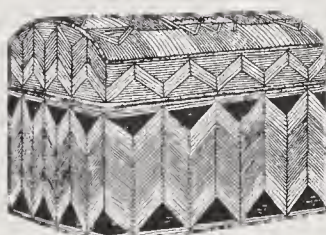
3-Waste basket
Appliqué design.



4-Cut-out patterns



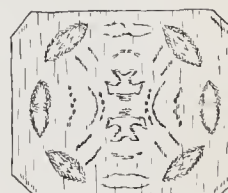
5-Box lid
Spruce root embroidery.



6-Box
Quill embroidery.



7-Needle case
Moose hair embroidery.

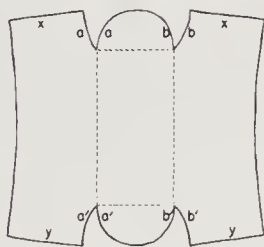


8-Bitten pattern.



a.

9-Mocock and pattern.



b.

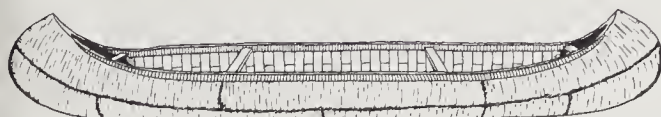


a.

10-Bark cooking tray and pattern.



b.



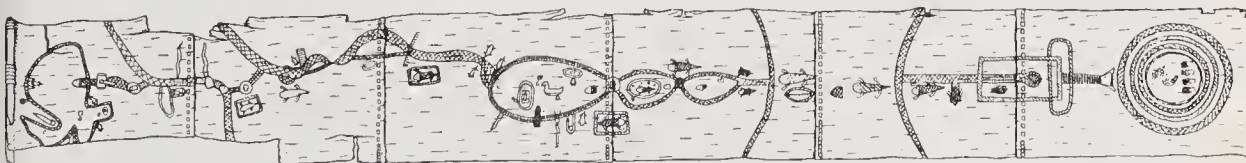
11-Canoe.



12-Envelope.



13-Moose collar.



14-Wide roll.

9b—Museum of the American Indian, Indian Notes and Monographs 11:2. 10a, b; 12—Bureau of American Ethnology, Anthropological Papers No. 17. 11—Canadian Field-Naturalist No. 33.

Birchbark and the Indian

1. INTRODUCTORY. Birchbark, a natural product of the northern forest zone, is one of the cornerstones of Indian life in that zone. It is as important to the material economy of these people as buffalo hide was to the Plains tribes or cedar wood and bark to the Northwest Coast peoples. This leaflet is an outline of the birchbark industry and the way the material fits into the life of the people who use it. Fuller details will be presented in future numbers of this series.

2. THE BIRCH TREE which provides the bark used by the Indians is the paper or canoe birch, *Betula papyrifera*, one of a number of species of the genus *Betula*, a tree which grows in many parts of the northern hemisphere. The paper birch is found in North America from Alaska to Newfoundland as far north as latitude 70 and as far south as a line running from northern Pennsylvania diagonally north and west across the northern tier of states. Birchbark is used only by tribes which live within its range and NOT by ALL Indians as is sometimes supposed. Not even all Indians within the range of the tree use the bark.

3. GATHERING THE BARK. Birchbark is made up of a large number of layers varying somewhat in thickness. The outer layer is white and rather rough. The light brown inner layers are extremely thin, and, in the late winter and early spring, the innermost layer is a dark brown coating between the wood and the bark. Since this layer plays an important part in the decoration of birchbark (see section 4) it is preferable to remove bark from the trees during those months when the dark layer is present.

The trees are cut down and laid on trestles or the like for convenience in handling. A cut is made along the top of the log and from it the bark is peeled slowly and carefully from the trunk with chisels or wedges. Among some tribes at least the process is helped along by placing the log over a fire to warm it, or by pouring on water. After it has been peeled off the bark is treated in various ways depending on the need. The rough white outer layer is frequently scraped off, and the thin inner layers may be separated into thicknesses required for making containers, sheets for bitten patterns and so on.

METHODS OF DECORATING

4. SCRAPING. The most common method of decorating birchbark objects is to scrape away the dark inner layer mentioned in section 3. When making objects which are to be decorated the inside of the bark is on the outside of the object.

Scraping may be employed so as to produce negative or positive designs. To make the first a cut-out pattern (see section 18) is placed on the bark and a line drawn around the edge. The dark layer is scraped away from the *background* surrounding the outlined pattern so that a dark design on a light ground is produced (2). To make the positive patterns the actual design is scraped away to produce a light design on a dark background (1). Scraping as a decorative technic is largely restricted to the tribes of the extreme northeastern United States and the adjoining parts of Canada. Within this area negative patterns are the rule except among the tribes of Maine and New Brunswick and the Ojibwa of the Great Lakes who make positive designs. There are, of course, occasional exceptions.

5. BARK APPLIQUÉ (3). By this is meant the sewing to birchbark objects of patterns cut from other pieces of birchbark. This technic is made necessary when bark peeled from the trees in the summer is used. Such bark does not have the dark inner lining and so cannot be decorated by scraping. The appliqué method is most developed by various birchbark using tribes in Saskatchewan. The technic has a limited use among the Ojibwa and among the Ontario and Quebec tribes.

6. PAINTING is very little used as a method of decoration. The few painted specimens I have seen are from the Wisconsin Ojibwa and are quite modern. Ordinary commercial paint has been used and the workmanship is quite crude.

7. SPRUCE ROOT EMBROIDERY (5) is used to a considerable extent by the Cree of Saskatchewan and occasionally by some of the eastern Canadian groups. The root is used to make very coarse stitched outline patterns. The Tetes de Boule of Quebec create a decorative effect with spruce root by dyeing the root rim bindings of bark dishes with several colors which are organized in simple repeat patterns. On very modern pieces commercial raffia may be used instead of spruce root.

Decoration by spruce root embroidery and by appliqué are related since in the latter method the roots are used to sew on the bark sections. Both types may in turn be related to the technic next described.

8. PORCUPINE QUILL EMBROIDERY (6). The Ottawa and Ojibwa of the Great Lakes, the Micmac of New Brunswick, and the Penobscot of Maine decorate—or formerly decorated—birchbark objects with quills. The ends of the quills are bent at right angles and the bent ends passed through holes in the bark. Almost invariably a lining of birchbark covers the bent ends (see cover of Leaflet 103). By placing the quills very close together and by using various dyes mosaic-like decorations are created. Around the Great Lakes such decorations usually take the form of rather realistic plants, birds and the like against a background of bark. The eastern groups favor all-over geometric patterns in which the bark does not show. The objects so decorated by both groups are almost invariably more or less rounded boxes with lids. Wall pockets, model canoes and other shapes are made however.

9. MOOSEHAIR EMBROIDERY (7). Long hairs, averaging about 5 inches, from the mane, cheeks and rump of the moose have been used by the Huron of Quebec to embroider birchbark, as well as cloth and skin. The moose hairs take dye well and many colors are used. The hairs have a superficial resemblance to porcupine quills, but may be recognized by their much smaller diameter. The patterns worked in moosehair on birchbark are always floral, with an occasional bird, animal or person. The representations of plants are very realistic. The embroidery shows either groups of more or less parallel hairs, or solid groups of hairs seen endways. To create the latter effect the hairs are pushed through the bark from the inside and the ends cut off close to the outer surface of the bark.

10. BITTEN PATTERNS (8) are made by folding very thin sheets of bark and then impressing patterns in them with the canine teeth. This remarkable and curious art must be done largely by instinct since the woman must move the bark between her teeth without any guidance from her eyes or from a pattern. After the biting is completed the bark is unfolded and a symmetrical pattern appears, usually of a simple floral type. Bitten patterns are used as guides for making beadwork designs, and scraped patterns on birchbark. Being extremely thin light shines through them and they are often made for no other purpose than to look at.

11. BEADING of birchbark is known to have been done by the Mohegan Indians of Connecticut. Simple isolated designs were made by sewing glass beads to the bark. See reference 11 for illustrations.

12. DESIGN STYLES have been pretty well indicated in the preceding sections. To sum up it may be said that all designs, save those made with quills by the Micmac and their neighbors, are of a curvilinear nature and very frequently represent life forms, those of plants being the most common. Living in the dense forest it is only natural that these tribes should turn to the various aspects of nature for the inspiration of their art. Nevertheless, European influence has made itself felt. References 1 and 4 deal with this question at length. The Maine and New Brunswick tribes use their own local "double curve" style, see reference 17.

USES OF BIRCHBARK

13. DWELLINGS were made by covering frames of poles, either conical or domed, with sheets of bark 6 to 8 feet long and 2 to 3 feet wide. The ends of these large sheets were reinforced with strips of wood. When the Indians traveled the sheets could be rolled up and carried along to be put up at each stopping place.

14. CONTAINERS. The most common container (1, 2, 9a) is the so-called mocock. It has a square or oblong base and sides sloping up to a rather small round mouth. These are made by cutting a sheet of bark to a pattern (9b), folding it into shape and sewing with spruce root. Like other containers made for liquids the mococks might have pitch smeared over the seams. Containers for dry substances are not so treated. Mococks are used primarily for the storing or carrying of food or water. Some have lids and others have handles like those on pails.

Another common type is illustrated by (10a). It is made by folding a piece of bark into a deep tray and tying the folds in place (10b). It is primarily a cooking vessel. A similar form is made by cutting the bark to a pattern and sewing with root.

Besides these main types there are round boxes with lids made by the Maine Indians, large pail-like shapes, envelope-shaped containers (12), large back-packs, and cradles.

15. CANOES (11) were made of birchbark and have come to be the most celebrated of Indian canoe types. They were, of course, not used by all Indians, as book illustrations, calendars and the like frequently indicate. Reference 16 illustrates most of the types.

16. MEMORY AIDS (MIDÉ ROLLS) (14). In the Great Lakes region an important religious society called the Midewiwin (mee-day-we-win) conducted elaborate rites which necessitated the recitation of long prayers, speeches and songs. To assist the memories of the performers symbolic drawings were made on rolls of birchbark and were, in a sense, read during the ceremonies. These sets of pictures were as near the Indian north of Mexico came to developing a system of writing. References 3 and 8 illustrate and interpret a number of these rolls.

17. OTHER OBJECTS of many kinds were made of birchbark, though space does not permit more than a mention of them here. Among them are trumpet-shaped moose calls (13), cups, comb cases, match, needle and perfume cases, and floats for fish nets. Later numbers in this series will discuss various types of birchbark objects in more detail.

18. CUTOUT PATTERNS (4) are used by many groups who work with birchbark. The patterns are various simple forms cut from birchbark and are combined to create larger designs. The worker selects such patterns as she wishes, lays them on the object to be decorated and draws a line around each. Several types are shown on the cover, and references 1 and 4 shown a great many of them.

Compiled by F. H. Douglas from the examination of specimens and from the following references:

BUREAU OF AMERICAN ETHNOLOGY, WASHINGTON

1. Art processes in birchbark of the River Desert Algonquin; a circumpolar trait—F. G. Speck. Bulletin 128, 1941.
2. Chippewa customs—Frances Densmore. Bulletin 86, 1929.
3. The Midewiwin or "Grand Medicine Society" of the Ojibwa—W. J. Hoffman. 7th Annual Report for 1885-86. 1891.

MUSEUM OF THE AMERICAN INDIAN, HEYE FOUNDATION, NEW YORK

4. Montagnais art in birchbark, a circumpolar trait—F. G. Speck, Indian Notes and Monographs, v 11, n 2, 1937.
5. Decorative art of the Tetes de Boule—D. S. Davidson. Indian Notes and Monographs v 10, n 9, 1928.
6. Decorative art on birchbark containers from the Algonquin River du Lievre band—V. M. Petrullo. Indian Notes v 6, pp 225-242, 1929.
7. River Desert Indians of Quebec—F. G. Speck. Indian Notes v 4, pp 240-252, 1927.
8. Bark record of the Bungi Midewiwin society—D. A. Cadzow. Indian Notes v 3, pp 123-134.
9. An Algonkian band at Lac Barriere, Quebec—Frederick Johnson. Indian Notes v 7, pp 27-39, 1930.
10. Mistassini notes—F. G. Speck. Indian Notes v 7, pp 410-457, 1930.
11. Mohegan beadwork on birchbark—F. G. Speck. Indian Notes v 5, pp 295-298, 1928.

UNIVERSITY OF PENNSYLVANIA PRESS

12. Penobscot Man—F. G. Speck. 1940.

UNIVERSITY OF OKLAHOMA PRESS

13. Naskapi; the savage hunters of the Labrador peninsula—F. G. Speck. 1935.

AMERICAN ANTHROPOLOGIST

14. Huron moose hair embroidery—F. G. Speck. v 13, n 1, 1911.

ABBE MUSEUM, BAR HARBOR, MAINE

15. The handicrafts of the modern Indians of Maine—Fannie H. Eckstorm. Bulletin 3, 1932.

THE CANADIAN FIELD-NATURALIST

16. Canadian aboriginal canoes—F. W. Waugh. v 33, n 2, 1919.

GEOLOGICAL SURVEY OF CANADA

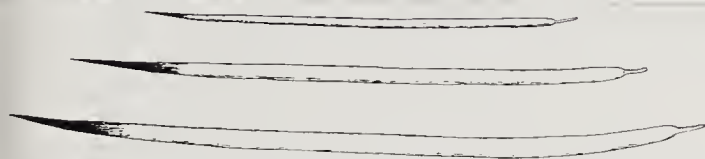
17. The double-curve motive in northeastern Algonkian art—F. G. Speck. Anthropological series no. 1, 1914.

Thanks are due to Dr. Frank G. Speck for assistance in preparing this leaflet.

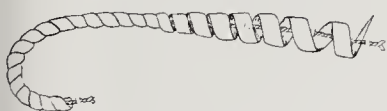
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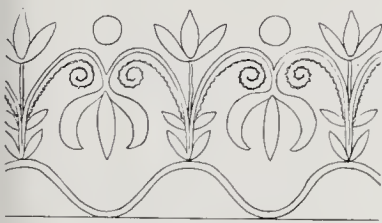
1. Porcupine quills, actual size.



2. One thread sewing.



7. Braided quillwork.



10. Iroquois floral band



3. Two-thread sewing; one quill.



8 Woven quillwork.



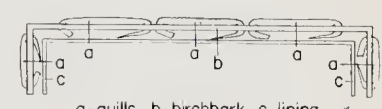
6. Quill wrapping



4. Two-thread sewing; one quill.



5. Two-thread sewing; two quills.



a-quills, b-birchbark, c-lining.

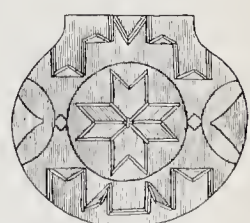
9. Quillwork on birchbark.



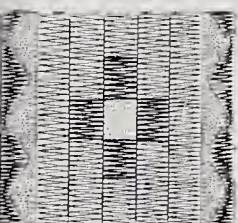
11. Algonkin thunderbird.



12. Ottawa, quills on birchbark.



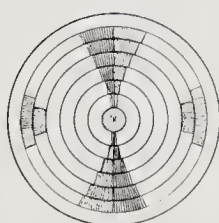
13. Micmoc, quills on birchbark.



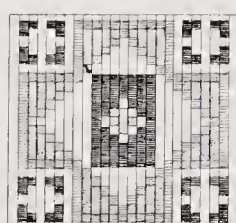
14. Plains geometric design.



15. Plains floral design.



16. Northern Plains disk.



17. Canadian woven quillwork.



quill stitches
18. Hupa basket

Frances Raynolds

Numbers 3, 4, 5, 6a, 8, 10 and 17—Museum of the American Indian.

PORCUPINE QUILLWORK

1. INTRODUCTORY. This leaflet discusses the use of porcupine quills in decorative art by the Indians north of Mexico. The custom is of particular interest because it is restricted to these Indians, with the possible exception of certain northern Siberian tribes, people closely related to our Indians in their manner of life. The leaflet describes the quills, the technics employed in creating decorations with them, and the major design styles found. Later issues will deal with these matters in more detail. Leaflets 2 and 73-74, concerned with beadwork, an art closely related to quillwork, should be read in connection with this leaflet.

2. IDENTIFICATION OF QUILLWORK. The shiny, grass- or straw-like trimming seen on many objects of Indian manufacture is made with quills of the porcupine. Quillwork may be mistaken for three other types of decoration, all rather uncommon and all quite easily identified, as follows. Bird quills—the shafts of the feathers—can be recognized by their ragged edges. They are split before using, while porcupine quills are not. Many west coast tribes use a shiny white grass, *Xerophyllum tenax*, on their baskets, and a few sometimes introduce porcupine quills into the designs. These are always dyed yellow. But since the grass may be dyed the same color the grass and quill may be mistaken for each other. The quill stitches are slightly larger and do not bend so smoothly as the grass. Some tribes use corn husk. This may be recognized by its dull surface as contrasted with the gloss of quills.

3. RANGE OF THE PORCUPINE. This animal, *Erethizon dorsatus*, is found in the northeast quarter of the United States, the western half of the country except in the extreme south, and throughout Canada and Alaska except in the northern sections.

4. QUILLS (1). Most of the upper part of the animal is covered with quills, black-tipped white cylinders $\frac{1}{16}$ to $\frac{1}{8}$ of an inch in diameter and from about 1 to 4 or 5 inches in length. The black outer tip is barbed.

5. PREPARATION FOR USE. The quills are softened by the application of moisture, either by soaking in water or by placing in the mouth. Some tribes flatten the moisture-softened quills between the teeth or finger nails. Others do not. Ordinarily the tips are not cut off, but they may be.

6. DYEING. Quills take dye very well. The color is applied by boiling the quills with the dye. Many native plant dyes were used and still survive to some extent. Leaflets 61 and 71 list a number of them. Commercial aniline dyes have been widely used since their introduction about 1885. Sometimes quills were dyed by boiling them with colored cloth of White manufacture. The color boiled out of the cloth and penetrated the quills.

MAJOR TECHNICS

7. WRAPPING (2). Objects of small diameter, such as bone whistles, rawhide strips in fringes, and small pipe stems, are trimmed by wrapping a series of quills around them so as to completely cover a section. The ends of the quills are caught in a simple knot or attached to a thread running down one side of the decorated object.

8. SEWING is the most common technic and has many variations. It is used on skin objects. There are two main types, one done with a single thread and the other with two or more. In the first type (3) a thread is caught at intervals under the surface of the skin and quills are wrapped around it, one at a time, as the stitching proceeds. This produces a fine line of quilling

which may be curved in any direction. In two-thread sewing (4, 5, 6) the threads run parallel, usually about one quarter inch apart, and are caught under the skin at intervals. One or more quills are folded around the threads, passing back and forth between them. The number of quills used and the manner of folding them produce a number of finished appearances. Examples of several are shown on the cover. The stitches may be parallel or criss-cross. Two-thread sewing produces bands of quilling, almost always straight, but not necessarily so.

9. BRAIDING is actually a variation of sewing (7). The difference is that the quills are wrapped around and between two threads stretched between two points rather than around a pair caught into a skin surface. One quill at a time is the rule, though two or even more may be used. Reference 2 gives full details. Braiding produces a narrow cord of quilling which is used to wrap around things, principally pipe stems. By introducing quills of different colors patterns can be created.

10. WEAVING (8) is the most complex of all the technics. A set of parallel threads is stretched between two points to form the warp of the fabric. Other threads, the wefts, are then woven back and forth over and under the warps. As the wefts are introduced flattened quills are worked in between and parallel to any pair of warps and over and under the successive wefts. The wefts with their quill coverings are kept pushed tightly together. Woven quillwork is done only north of the United States. It produces bands, usually one to three inches wide, which are sewn to clothing or other objects. The angular geometric designs may be very complex, with many colors.

11. QUILLING ON BIRCHBARK (9). In the birchbark area, see Leaflet 102, porcupine quills are extensively used. The ends of the quills are bent down at right angles and passed through holes in the bark. A lining of bark is used to cover these ends. Such work is produced by tribes in the Great Lakes region and in northern New England and the adjoining parts of Canada.

MAIN TYPES OF DESIGN

12. NORTHEAST. From the Ohio Valley east to the Atlantic and north of this line designs in quillwork are predominatingly curvilinear and largely based on plant forms (10). One thread stitching is the rule so that the patterns are delicate and open, not covering the entire surface decorated. But two-thread stitching and fairly large solid areas are not unknown. Other life forms may be made, notably highly simplified bird forms representing the Thunder bird (11). Geometric designs also appear to some extent. This is particularly true of the birchbark boxes from the Micmac and others to the far Northeast (12). The birchbark boxes of the Great Lakes tribes, however, frequently bear plant, bird and animal designs (13). The curving floral designs appear to be basically Indian, but to have been somewhat influenced by French colonial design.

13. PLAINS. The northern and central Plains tribes produced quantities of quillwork and still carry on the art. It is scant or absent among the southern groups. Angular designs, often in large masses, predominate, with two-thread sewn bands as the common technic. The older designs were all geometric (14). But the French influence mentioned in the preceding section eventually reached the Plains. Because of the domination of the two-thread technic, with its resulting rather stiff bands, really graceful plant forms could not be made very successfully, so the flowers, leaves and stems have a rather

clumsy, angular style (15). One-thread sewing is not unknown, but is most generally limited to the making of tight spiral rosettes. Wrapping and braiding are used extensively, the former mostly on rawhide fringes and the latter on pipe stems. In both, angular designs of a simple type are used.

In central Plains quilling the quills are completely flattened, while northern tribes, such as the Crow and Blackfoot, hardly flattened the quills at all. Hence their work is coarser than that of the tribes south of them. The use of large quilled disks to be sewn to clothing or tipi walls is very characteristic of the northern tribes (16).

14. SOUTHWEST. Though the porcupine is common in this area quillwork is very scarce. The only uses of it known to me are two. The Hopi and Zuni decorate the broad ankle flaps of some ceremonial moccasins with bands made of parallel strips of black and white quilling. At least some of the small rattles used by Navaho medicine men are wrapped with coarse, yellow braided quilling.

15. CANADA AND ALASKA. The quilling of the Canadian Plains and of the eastern wooded section is that of the United States regions south of them. In central Canada and on up into Alaska woven quillwork seems to have been the rule, though bands of sewn work and cords of braided work were also made. Generally speaking the development of the craft was small in quantity. The quality of the best far northern quilling is very high, for the woven work of the central Canadian tribes is unequalled for fineness, complexity of design and beauty of color (17).

Along the Northwest Coast a little sewn quillwork was made, apparently due to influences from the interior tribes. Simple geometric designs were used instead of the characteristic animal patterns of the region.

16. CALIFORNIA. As has been indicated in section 2 quills sometimes appear in northern California basketry of the finely twined type made by the Hupa and their neighbors (18). The Klamath of Oregon also use quills. In the coiled basketry of central California one occasionally sees a few stitches on bird quill (see section 2). The porcupine quills are dyed yellow and are used very sparingly in any given basket.

The northwestern California tribes also make some coarse, yellow braided quill cording for use on religious paraphernalia.

Compiled by F. H. Douglas from studies of collections and from the following sources:

MUSEUM OF THE AMERICAN INDIAN, HEYE FOUNDATION

1. The technique of porcupine quill decoration among the North American Indians—William C. Orchard. Contributions v 6, n 1, 1916.

UNITED STATES OFFICE OF INDIAN AFFAIRS

2. Quill and beadwork of the western Sioux—Carrie A. Lyford. Indian Handcrafts pamphlet 1, 1940.

UNIVERSITY OF PENNSYLVANIA MUSEUM

3. The art of quillwork—B. W. Merwin. Journal, v 9, n 1, 1918.

UNIVERSITY OF ARIZONA

4. Ecology and life history of the porcupine . . . of the southwestern United States—Walter P. Taylor. Bulletin v 6, n 5, 1935.

DENVER ART MUSEUM

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Title III ESEA
NORMAN FEDER - Curator



Main Types of Indian Metal Jewelry

1. INTRODUCTORY. This leaflet is designed to give a broad outline of metal ornament making by Indians north of Mexico in the last 150 years or so. Further details about each type will be given in future numbers of this series. Navaho work is covered by Leaflet 15. In the case of several types future numbers must await the completion of investigations now going on, since these types have been hardly more than mentioned in the literature.

2. HISTORICAL BACKGROUND. Though the custom of making metal ornaments by Indians is not due to white influence, those types of silver, German silver, copper and brass ornaments discussed in this leaflet are entirely due to that influence. The ornaments which are purely Indian in origin are those made of native copper by various groups of Middle western and southern Indians in the prehistoric and early historic periods. This early copper industry is discussed in Leaflet 75-76. Though some of these copper ornaments now appear to have been made after white men had explored parts of the country there is no evidence to date that the ornaments are other than purely aboriginal in conception and execution.

Metal jewelry of the types with which this leaflet deals is the result of white influence first brought to bear on the Indians in the latter half of the 18th century. The general procedure was for Europeans or Americans to introduce trade jewelry to a tribe and then for some members of the group to learn how to make it themselves. The political situation after the end of the American Revolution gave a great impetus to this procedure. Both British and Americans were anxious to win the favor of the Indians and deluged them with all kinds of silver jewelry. References 4-6 give many details. As the Whites moved westward they drove many of the tribes ahead of them and thus brought the idea of metal jewelry to the Indians of the Southwest and Plains. The latest development of silversmithing was among the coast tribes of British Columbia and southeastern Alaska since this was the last major group of Indians to be strongly influenced by Whites. Silverwork did not begin in that region, called the Northwest Coast, until about 1865.

3. TECHNICS were about the same everywhere. To make brass and copper trinkets the Indians hammered out wire, cartridge cases and kettles. The use of these metals generally preceded that of silver. Silver objects were made from coins until quite recent times when ingot or sheet silver has become available. German silver—an alloy of copper, zinc and nickel—comes in sheets from which the shapes desired are cut.

Among the Navaho casting is done as well as hammering. Engraving is the old basic method of decoration. Among the Navaho almost entirely and to some extent on the Plains it has been replaced by stamping with dies. Stamping began in the latter region about 1870. Until very recent times tools were of the simplest nature, odds and ends obtained from the Whites and adapted by the Indians to their needs. Nowadays in the Southwest a good many commercial metalworking tools are used.

4. IROQUOIS silverwork began sometime toward the end of the 18th century and has been carried on to some extent ever since, though recent pieces are the products of a government-backed revival. The most characteristic pieces are brooches modeled on European forms. Hearts (23, 24), square-and-compass patterns inspired by Masonic emblems (25), and various round shapes are the most common. Bracelets, earrings, headbands, combs and rings were also made. The rings frequently have a low block of metal instead of a stone setting. (12) shows this, though it is not an Iroquois piece. Many Iroquois ornaments are pierced with open work designs and the metal tends to be quite thin. The nearby Delaware made silver jewelry of a similar kind.

(34) illustrates a Delaware headband made about 1830. Other eastern headbands are of the same general type.

5. GREAT LAKES AND MISSISSIPPI DRAINAGE. Silverwork appears to have begun in this immense area in the years around 1800. Until the introduction of German silver, sometime around 1850, silver was the metal used. The common shapes were convex round brooches of many types (30, 33), broad armbands (29) and earrings (31, 32). Headbands, large combs for women and various other ornaments were also made. The metal is thin, and when decorated is engraved with both abstract and more or less realistic designs: angular figures, scrolls, loops and such things as hearts and flowers. Plain pieces are common, as are openwork designs (30), especially in the brooches. These range in size from one half to four or five inches in diameter. All have a central hole crossed by a movable tongue. Gorgets (26) based on European military ornaments were common in the area and in the South.

6. SOUTH. Relatively little information is available about metalwork in this area. The Florida Seminole of today make silver ornaments (28) and the Cherokee, Choctaw, Alabama and Koasati are known to have done so. Brooches, earrings (27), armbands, headbands, pendants, rings, and gorgets were made. The art seems to have begun in the mid-18th century, reached full development about 1800 and come to an end by 1830.

7. OKLAHOMA AND THE PLAINS. A number of the Plains tribes now resident in Oklahoma have been making metal jewelry since about 1830. The earliest records refer to round plates beaten out of silver dollars and worn as hair ornaments. In the mid-19th century German silver—invented about 1825—became available in quantity and has been popular ever since. The metal workers of this early period were much influenced by the ornaments of eastern tribes which were being moved into Oklahoma at the time, and made arm bands, brooches and earrings of eastern types. Pairs of very narrow bracelets were and are typical (11).

About 50 years ago the rise of a religious cult based on the use of the peyote, a cactus-like plant in the succulent group, began to have a great effect on Oklahoma jewelry making. Today this school of metalwork is highly productive. The large majority of its forms, if not all, are based on symbols and ideas of the cult. The peyote itself, the snake-bird or water turkey (the smoke bird of the ritual), the feather fan, abstract geometric designs symbolizing the "path of life" and color visions, the cross, either Christian or as a symbol of world quarters or the logs in a fire, the tipi, and the tōmahawk as a symbol of "Indianness" are the common design elements. The pieces are small, flat and thin, and are either plain or decorated by engraving. Tie slides (14) pins (15) and earrings (9, 10) are the common forms. Rings (11) of the common eastern type are made.

On the central and northern Plains metalworking hardly existed. Wide, corrugated brass arm bands, big plain round brooches for women's belts or men's hair ornaments and a few other trinkets were made in very small quantities. Even trade jewelry was limited in quantity and range of shape.

The Cheyenne were an exception. Even before they settled in Oklahoma they were making round brooches used on belts, buckles (13), bridle trimmings and smaller pieces, all engraved with geometric designs. The art still exists among them.

8. NAVAHO silversmithing is too well known to demand much attention here. It began in or about 1853 as a result of Mexican influence, developed very slowly till toward the end of the 19th century and since then has ex-

panded with ever increasing rapidity. Now its sales run into the millions, and hundreds of workers toil steadily at the craft. Like every success it has been trailed by a host of fakers and imitators. Both hammered and cast pieces are made. The well known rings (20), bracelets (21, 22), necklaces (19), buttons (16, 17, 18) and other forms are due some to Mexican, some to American influences. For a long time the decoration has been applied with die stamps bearing Spanish and Mexican leather designs, all lacking symbolic implications. Setting with turquoise has been a prominent feature of the art for the last 40 odd years. For further details see Leaflet 15 and the publications referred to in it.

9. PUEBLO silver jewelry has long been made in a number of villages, but because it closely resembles Navaho work it is not recognized as Pueblo by most people. Many pieces of Pueblo work are indistinguishable from those of the Navaho. Some identifying features do exist, however, for Zuni work, especially that of the modern period. The use of a great deal of turquoise, most frequently in small pieces (2); a certain somewhat delicate elaborateness; the presence of flat or round wire trimming; and inlaying in large masses of several colors (1) are typical. Except for two very modern types, to be discussed below, other Pueblo silver is too little known to permit remarks about identifying features. The modern types mentioned are those produced by one Hopi man and by certain young men at Santo Domingo. The former (5) may be recognized by its use of typical Hopi pottery designs. The pieces look like highly individual modern costume jewelry ornaments and such they are. The Santo Domingo silver, first made in 1938, also uses the pottery designs of the town. This silverwork is very smooth and beautifully finished (3, 4).

In technics and shapes Pueblo jewelry follows Navaho practices.

10. NORTHWEST COAST. This is the youngest of the great regional types, having been started about 1865. It is easily recognizable because of the presence on the pieces of the highly conventionalized animal designs so typical of Northwest Coast art. These designs are most familiar through their use on totem poles and the like. The pieces are made from silver coins and decorated by engraving. The bracelet (6, 7) is by far the most common form. Its peculiar convex shape and springy quality would make it identifiable even without the distinctive designs. After bracelets the most common shape is the spoon (8). A few earrings and shawl clasps have been made as well as some pieces bearing White designs. Some work has been done in gold, the only use of this metal by Indians north of Mexico. Gilding of silver has been done also. There are tribal variations in bracelet shapes.

Compiled by F. H. Douglas from studies in museum collections and from the following publications:

- MUSEUM OF NORTHERN ARIZONA
 - 1. A brief history of Navajo silversmithing—Arthur Woodward. Bulletin 14, 1938. Contains considerable data on eastern silver.
 - 2. Hopi silversmithing—its background and future—M.-R. F. Colton. Plateau, vol. 12, no. 1, July 1939.
- MUSEUM OF NEW MEXICO
 - 3. Silver work of the Florida Seminole—John M. Goggin. El Palacio, vol. 47, no. 2, February, 1940.
- THE HISTORICAL SOCIETY OF PENNSYLVANIA
 - 4. Indian silver ornaments—Harrold E. Gillingham. The Pennsylvania Magazine of History and Biography, vol. 58, no. 2 April, 1934.
- MUSEUM OF THE AMERICAN INDIAN, HEYE FOUNDATION
 - 5. Indian ornaments made by Philadelphia silversmiths—Harrold E. Gillingham. 1936.
- MICHIGAN ACADEMY OF SCIENCE, ARTS AND LETTERS
 - 6. Notes on Indian trade silver ornaments in Michigan—George I. Quimby, Jr. Papers, vol. 22, 1937.
- THE OLD WEST SERIES, DENVER
 - 7. Navajo Indian silver-work—Margery Bedinger. No. 8, 1936.
- THE ROYAL SOCIETY OF CANADA
 - 8. Indian silversmiths of the Pacific Coast—Marius Barbeau. Transactions, 3rd series, vol. 33, section 2, p 23.

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Floor plan of a peyote meeting in a tipi. The stars are officials. The wood pile lies outside. From an engraving on a Cheyenne silver cup.

THE PEYOTE CULT

LEAFLET 105

DECEMBER, 1950
2nd Printing, March, 1956
Reprinted July 1967

1. INTRODUCTION. This leaflet is about the beliefs and ceremonies of the Peyote (pay-yó-te) cult, an Indian religion which in recent times has spread very widely in the Middle West and West. Objects used by individuals in the ceremonies are outlined in Leaflet 106.

2. HISTORY OF THE CULT. Peyote was used in religious ceremonies by Mexican Indians long before the coming of the Spaniards with Christianity about 1525-30. Indians of the United States have used peyote widely for only the past fifty years, though it was used earlier by a few tribes, notably the Lipan Apache, the Kiowa and Comanche. From these southern tribes the rite in various forms gradually traveled north and west. As it spread, many pagan forms were dropped and certain characteristics of Christianity were added from both Catholic and Protestant sources. Now it claims to be a Christian religion, and in some sections has been incorporated as "The Native American Church". Its native priests claim the right to administer the sacraments, some even to celebrate the marriage ceremony. However, both Roman Catholics and Protestants have worked against peyotism since it was first encountered. Despite this and other opposition the cult is today very active and continually growing.

3. BELIEFS OF THE CULT. Only the most general statement can be made because of the wide variation among individuals and various regional divisions. A very high code of moral teaching is presented. There is a strong racial trend stressing the Indian as a being apart from the White man, and serving as a medium uniting all Indians. The cult has a wide appeal because of the sense of well-being and happiness induced by the use of the peyote. To a defeated and broken minority people these qualities offer a welcome relief from the difficulty and poverty of their lives. Their own great past is relived in romantic dreams, and there is a suggestion of promise that through peyotism this past may return. Tales of wild orgies are in absolute contradiction to the facts.

4. THE PEYOTE PLANT. Peyote is a spineless cactus, *Lophophora williamsii*, shaped like a turnip with a flower that grows in the center of its globular head. The part used, called the button, is the dried flowering top, averaging about $1\frac{1}{2}$ inches in diameter and $\frac{1}{4}$ inch in thickness. The plant grows wild in the southern part of Texas along the Rio Grande and in the adjoining section of northern Mexico as far south as Querétaro.

5. METHODS OF USE. The peyote is taken in three different ways: 1, by chewing and swallowing the dried or green buttons; 2, as "tea" derived from boiling in water; 3, as a powder made by grinding up the buttons. The most usual method is that of chewing and swallowing the buttons.

In addition to its use in cult rites the plant is employed as a medicine for many ailments.

6. CHEMISTRY. The complex chemistry is discussed at length in reference 1. The plant contains 9 alkaloids. Part of these, notably mescaline, are, generally speaking, sedative in effect. The rest produce effects of reflex-irritability and excitement.

Peyote is not considered to be a habit-forming drug by impartial scientific observers. But the whole subject is so involved in emotion and controversy that to many the question has not been definitely settled.

7. EFFECT. The main effect is excitement quickly followed by a feeling of contentment, well-being and friendly attitude toward the world in general. A secondary effect, not always felt, is a stimulation of the optic

nerve which may, under favorable circumstances, produce color visions. Worshippers tend to lose track of time and find it difficult to gauge distances.

8. THE CULT SERVICE. The usual form of ceremony is the regular "church" service held once a week if convenient. The rite varies by tribes and individual leaders. Some sponsor a meeting, as was once done for the Sun Dance. The rites may be held to cure illnesses, in gratitude for recovery from illness, on a child's first four birthdays, to pray for the successful delivery of a child, for a dead person, or for the health of the participants. In recent years "holiday meetings" have been introduced to celebrate Easter, New Year's Day, Thanksgiving, etc. Dancing has no part in the services.

A condensation of the Ute rite as witnessed by Omer C. Stewart on the Ute reservation in southwest Colorado follows. See reference 4.

The meeting may be held in a large tipi, but often a house, or sometimes a hogan (Navaho home) is used. Because cleanliness is a definite principle of the religion, the participants usually bathe or take a sweatbath before the services. Among many tribes a day-long fast is also observed. The officials are chief or leader, drummer, firechief, cedarman and doorman. The leader supervises setting up the tipi and making the altar. He also furnishes all the ritual equipment (see Leaflet 106) necessary for the meeting: drum, drumstick, staff, rattle, fan, dried juniper or cedar leaf incense, peyote buttons, the large chief peyote for the altar, an eagle bone whistle, a small bunch of sage sprigs, 2 sacks of Bull Durham tobacco with papers, and a small scarf or rug about 2' by 4'. He carries this equipment in a small satchel or suitcase. However, if individual members wish to use personal fans, rattles, drumsticks, or peyote they may do so after midnight. The drummer prepares the drum (see Leaflet 106) and beats it to accompany the leader's songs. At specified times during the service the cedarman throws juniper leaves on the fire to make incense to purify the paraphernalia. The firechief tends the fire and passes the firestick to light cigarettes, brings in the midnight water, keeps watch over those who leave the meeting and directs all their re-entrances.

Participants contribute what they can afford to the cost of the ceremony and also bring food for the after-ceremony breakfast the next morning.

The day of the service preparations are made for the night meeting. Leading members erect the tipi, if one is to be used and is not already standing. The entrance is always to the east. A low altar is made on the floor just west of the center of the room. It is shaped like a crescent moon with horns facing east. A shallow groove along the top represents the "peyote road" over which thoughts or visions pass to and from God. The fire is built directly east of the altar. Straw, blankets or canvas for seats are spread around the edge of the tipi.

The leader, carrying his equipment, begins the meeting, which will last all night. He heads a single file line which forms outside the tipi any time between 7 and 10 p. m. The drummer comes next, carrying the iron drum, the cedarman next, then the participants and the firechief last. Before the procession enters the leader prays. He tells what the meeting is for and prays for all the people there and others outside the meeting. Through the words of the leader all the members are praying to nature, to God and to Jesus.

All file in, passing to the left. The leader sits directly west of the altar's center, the drummer on his right, the cedarman on his left, then the men next to these on either side, the women and children on both sides near the entrance, and the fire chief on the north side just inside the entrance. The leader places the large chief peyote on the sage sprigs which are then laid on the moon altar. He prays for 5 or 10 minutes. Tobacco is passed and everyone lights a cigarette, not for pleasure but as part of the rite. Then the sagebrush sprigs are passed and the leaves are brushed over the body for purification. The leader passes the bag of peyote buttons and everyone takes four. The leader takes four himself

and when the buttons have been eaten lays out the rest of his paraphernalia. The taste of the peyote is very bitter and frequently causes vomiting.

The leader then sings the Opening Song and three other songs while the drummer at his right drums for him. This is the first of four songs which have to be sung at fixed times—the Opening Song, the Midnight Water Call, the Morning Water Call, and the Quitting Song. Following the opening the drum is passed to the leader who hands his staff, rattle and fan to the drummer. The drummer sings four songs while the leader drums for him. Then the cedarman sings four songs while the leader drums for him also. After that the drum and the equipment are passed around clockwise and each participant sings four songs in turn, the man to the right of the singer drumming for him while he sings. The singer holds the gourd rattle in his right hand and shakes it in time to the music. The staff and fan are held in his left hand. When the drum comes back to the leader he may pass out more buttons. Again the drum is passed around as before. Participants sing and eat this way till midnight. Women do not sing.

At midnight the leader sings the Midnight Water Call. The firechief brings in a bucket of water and puts it east of the altar. The cedarman prays at length while a cigarette is smoked by the officials who pass it from one to the other. The bucket is then passed to the man on the left of the firechief; he drinks and passes on the bucket clockwise.

The leader leaves the meeting to pray outside. When he returns, singing is resumed with renewed vigor and increased variation. The devotees may now use their own equipment if they wish. Until just before sunrise the drum makes the clockwise rounds with each person singing four songs in turn. When the staff, fan and rattle finally come back to the leader at this time, he sings the Morning Water Call. In response a woman, usually the leader's wife, places the water east of the firestick, and the features of the Midnight Water Ceremony are repeated, with the leader praying.

Breakfast is then brought in. The leader sings three songs and finally the Quitting Song, the last of the meeting. The leader then prays, all equipment is put away, all cigarette butts are burned, another prayer is said and blessings of the breakfast are recited. The food (corn, fruit and meat) is passed by the firechief to the first person south of the door. The food circulates but once and what remains is taken out by the firechief as he leads the general exit. The leader is second, followed by his assistants, then the other participants. Outside, informality prevails, the remaining food is eaten, the Indians stretch to relieve their muscles from ten to twelve hours of cross-legged sitting and talk of their experiences of the night, or of other meetings, of their faith, and seek to exhort and encourage one another.

Compiled from the following and other sources by Willena D. Cartwright.

Thanks are due for help to Dr. Omer C. Stewart and Alice L. Marriott.

The literature on peyote is very large. References 1 and 6 list hundreds of additional titles.

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1. The Peyote Cult—Weston La Barre. Publications in Anthropology 19, 1938. The major study of the subject.

AMERICAN ANTHROPOLOGIST

2. Peyote, the Giver of Visions—Ruth Shonle. New Series, vol. 27, no. 1, January-March, 1925. Good for history, distribution and ritual differences.
3. The Appeal of Peyote as a Medicine—Richard E. Schultes. New Series, vol. 40, no. 4, October-December, 1938.

UNIVERSITY OF COLORADO

4. Ute Peyotism: a Study of a Cultural Complex—Omer C. Stewart. Studies, Series in Anthropology 1, 1948. Based on personal experience. Good for tables showing tribal distribution of ritual variations.

UNIVERSITY OF PENNSYLVANIA

5. The Diabolic Root—Vincenzo Petruccio. Philadelphia, 1934. Beliefs, procedures and variants among the Delaware.

VIKING FUND

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Drawing by Dorothy Field.

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THE PEYOTE CULT: RITUAL EQUIPMENT

LEAFLET 106

2nd Printing, June 1957
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DECEMBER, 1950

1. INTRODUCTION. This leaflet describes the principal and most characteristic objects used by individuals in ceremonies of the Peyote Cult, a modern Indian religion widespread in much of the Middle West and West. It does not include descriptions of objects used only by officials during the services. For information about the cult, its history and services see Leaflet 105.

2. WHEN OBJECTS ARE USED. The major rite of the cult is an all-night prayer and song service in the course of which the rattles, fans, drums and other things noted in this leaflet are used. A typical service is described in Leaflet 105.

3. SEX OF MAKERS. All of the ceremonial objects described in this leaflet are made by men, though beadwork—much used on peyote objects—is normally done only by women.

4. CHANGES IN EQUIPMENT. The Peyote Cult is a relatively new and loosely bound informal organization. Therefore the ritual equipment is not definitely standardized. The objects described are now in general use, but new types appear and old ones drop out of use; new designs and methods of applying them appear and disappear. Certain men become highly expert in making the various ritual objects, and their products are sold widely not only in their own tribes but also elsewhere. Well made fans, etc. are in great demand. This tends to standardize equipment.

5. FANS of several types, each with subdivisions, are used in peyote rites. They do not serve as a means of cooling by stirring the air but are symbols of birds, the messengers between God and Man. They are used to make symbolic gestures which vary greatly among the tribes.

Most fans fall in one of two classes: 1, fans with feathers firmly fixed to handle, either flat (A, B) or in a round bunch (C, D); 2, fans with a movable cluster of feathers (E, F, G, H, I, J) each inserted in a skin socket. The sockets are sewn individually to the top of the handle loosely enough to allow a considerable degree of individual and group motion. Type 2 sometimes has no handle (G).

Handles are usually—but not invariably (H)—covered with fine net beadwork worked into many-colored elaborate designs symbolizing the color visions seen during cult services. A long tassel made of many strands of twisted skin, sometimes commercial cord, often hangs from the butt. Often Catholic medals are tied to these strands (D). Sections of the vanes on some feathers may be cut away and the portions of exposed shaft covered with net beadwork (E). Some feather edges are cut into serrations (E); others are trimmed to long slender shapes. Tiny bits of feathers are often attached to the butts or tips of the main plumes. Some modern fan handles are made in two parts joined with a screw-in socket unit from a jointed fish pole (D).

Feathers range in number from 4 to 10 large ones (G) to 50 or 60 very small ones (I). Eagle (A, E, G), water turkey or snake bird (F), and fly catcher (J) appear to be the most favored feathers. Others most commonly used are: prairie chicken (H), hawk of various kinds (B), pheasant, magpie

(D), grouse, and flicker (I). Macaw plumes, red or blue (D), are used when they can be obtained from zoos or bird stores. Combinations are frequently seen.

6. RATTLES (K, L, M) are made of small, approximately round gourds, 2-4 inches in diameter, attached to very slender wood handles 8-10 inches long. 20-30 small pebbles are in the gourd. The handle passes through the gourd and a tuft of horse hair, often dyed, is attached to its upper end. A tassel like that used on the fans is on the handle butt. Handles are usually covered in whole (K) or part (L) with net beadwork like that on the fan handles. Some handles are decorated by wrapping closely with a long string of beads. Some are plain or carved (M). Engraved or painted designs connected with the cult may appear on the gourds (M). The rattle is held vertically and shaken with an up and down motion.

7. DRUMS are made of 3-legged cast iron kettles with the bail ears filed off (N). Sometimes earthenware crocks are used (O). The kettle is half filled with water into which 10-12 live coals—sometimes herb perfumes—are thrown. The Kiowa say the drum represents thunder; the water in it, rain; and the coals, lightning. A water soaked buckskin head is stretched over the kettle mouth. 7 marbles are put under the cover around the rim outside to serve as lugs on which is caught the tie rope or thong which holds the head tightly stretched. The tie is a complicated one which when complete outlines a 7-point star. The lug marbles are the points of the star outlined by the thong on the sides and bottom of the kettle. When observed from the bottom of the drum the whole design is apparent. It is regarded by some as a symbol of the Peyote button, by others, of the morning star. The cord is tightened with horn picks.

8. DRUM STICKS (Q, R, S) are wood rods without padded heads. They are 12-14 inches long, some plain (S), some slightly (Q) to elaborately (R) carved in shallow relief, usually with complex geometric line designs. Only one drum stick is used.

9. LEADER'S STAFF. (T, U, V, W). The leader carries a slim wooden staff about 3 feet long. It may be round (V) or sided (T), carved with cult symbols, often from Christianity (U), or trimmed with 3 small bands of net beadwork (V). Some Kiowa staffs have white coloring rubbed into the fine lines of relief carving in geometric designs (T). There is often a tuft of horse hair at the top. One staff (Comanche) has a group of tiny replicas of the fan, rattle and other ritual objects tied to the top (W). Some staffs pull out or unscrew in the center.

10. MESCAL BEAN NECKLACE. (X). The red-brown seeds of the mescal plant are pierced with a hot wire and strung to make necklaces worn by peyote service officials and sometimes by individual members during the ceremony. Often a small, flat, round beaded bag for carrying a large peyote button is suspended from the necklace.

11. BOXES (Y, Z) are made to carry individuals' sets of equipment, fans, rattles and the like. They are often, if not usually, commercial cedar wood lidded boxes with brass hinges and lock clasp. They are large enough to hold rattle, fan, feathers and other small pieces of equipment. The boxes are carved, painted, or both, with designs related to peyotism. Here as elsewhere in peyote cult art a long-tailed, sharp-winged bird, the water turkey, is a favorite subject.

12. SILVER JEWELRY (AA) is not ritual equipment but is mentioned here because it is often worn by peyote cult members as a means of recognition and as a symbol of belief in the cult and its teachings. The custom appears to be one of 20th century origin. Full details are given in reference 2.

The jewelry includes stick pins, tie or neck cloth clasps, earrings, rings and occasionally other objects. These are made in the form of birds, tipis, peyote buttons, fans, rattles, drums and other equipment alone or in many combinations. Designs, symbols of cult beliefs, are engraved or stamped on the metal.

The pieces are small, light and usually simple and clear cut in design. They are made by men silversmiths belonging to Oklahoma tribes—occasionally elsewhere—for use by cult members and have never been produced for sale like Navaho silver jewelry.

A recent development, apparently not extensive, is the making of silver cups (BB) engraved with peyote symbols. A design from one of these cups is printed on the cover of Leaflet 105. Only one pair of these cups, of Cheyenne make, has been seen, and it is presumed—lacking definite information—that someone had a new idea of using a special cup for the water drinking parts of the peyote service instead of an ordinary one of tin or china.

13. COSTUME. No special costumes are worn during peyote services. There is, however, a desire to wear skin clothing of old Indian types, shirts and leggings for the men and long dresses for the women. This is in line with the policy of the cult of stressing Indian as opposed to White culture.

In Oklahoma, at least, it is considered desirable to wear blankets of trade cloth which are half red and half blue whenever possible.

Under most circumstances participants in peyote rites wear clothing of White manufacture. Moccasins are still widely worn by at least older Indians, and a feather or two on men's hats are usually seen.

Compiled by Willena D. Cartwright from the following sources, and from examination of museum collections:

DENVER ART MUSEUM

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AMERICAN ANTHROPOLOGIST

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YALE UNIVERSITY

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VIKING FUND

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Thanks are due to Alice Marriott and Omer C. Stewart for assistance in preparing this leaflet.

DENVER ART MUSEUM

1300 LOGAN STREET, DENVER, COLORADO

DEPARTMENT OF INDIAN ART

RICHARD G. CONN, CURATOR

FREDERIC H. DOUGLAS, EDITOR



INDIAN CULTURE AREAS IN THE UNITED STATES

LEAFLET 107

2nd Printing, March, 1956

DECEMBER, 1950

1. INTRODUCTION. Most people not students of the subject frequently think of all Indians as being alike, and find it difficult to understand the differences between the main geographical groups.

This leaflet is designed to give, through very brief sharp sketches, impressions of these major divisions, stressing the outstanding features of each. These geographical divisions are called culture areas, "culture" in this case meaning "a way of living", not high-brow artistic and society manners. The descriptions apply in general to the early periods of contact with the Whites, and somewhat thereafter.

2. NORTHWEST COAST (A). The Pacific coast line of southeast Alaska, British Columbia and to some extent the Washington coast—about a dozen major tribes and languages—often called "Siwash" from the French word "sauvage", a savage—on the lower Columbia River the heads of babies flattened by pressure in the cradle—the sea and wood, cornerstones of the culture—great forests providing logs for huge dugout canoes and plank houses—totem poles (in this area only)—a universally used grotesque art based on life forms in carved and painted wood, stone and goat horn—fish, sea mammals and wild plant foods to eat, but no farming—clothing of woven cedar bark and skin—generally barefoot—masks of painted wood in bewildering variety, used in the equivalent of theatrical performances—weaving in mountain goat wool of two kinds: one, the Chilkat blanket and shirt with elaborate colored designs; two, the Salish, very coarse and white without design—silver jewelry and woven basketry—great regard for wealth and social standing of haughty ruling noble families with, long ago, slaves for servants.

3. CALIFORNIA (B). Dozens of little groups, each with its own language and mostly living in isolated mountain valleys—the southern groups called "Mission" because of association with Spanish missions—"Digger" applied as nickname to many groups by the Whites—to a great extent peaceful, simple people reduced more in population by the coming of the Whites than any other Indians—more basketry, some with interwoven feathers, than all other Indians put together—dominance of the triangle in basketry designs—very little clothing, largely grass or rush aprons, except skin in northern section—generally barefoot—mostly domed brush huts, with some wood, half-underground houses in the North—travel on foot, except in dugout canoes on northern rivers, and in sea-going plank canoes, unique in North America, in the Santa Barbara region—acorns, wild seeds, some fish and game for food, but no farming—plain pottery to some extent in the South only—no idea of tribes or tribal organization, but fairly complex religious practices—among the Mission groups a use of a narcotic, found in certain *Datura* plants, in ceremonies.

4. BASIN (C). Largely barren desert area in Utah, Nevada, southern Oregon—many bands of Paiute and Shoshone speaking related dialects—the nickname "Digger" applied to them as well as to central California tribes—least developed of all Indians, perhaps of all people in the world—lived at bare subsistence level on wild seeds, roots, insects and a little game, with no farming—the scantiest of clothing, but makers of woven rabbit skin blankets—only brush wind-breaks and huts—coarse, slightly decorated basketry the main craft, with some plain pottery and a little very fine basketry near the Nevada-California border—social and religious organization at the most elementary level, just poor families or bands wandering on foot in search of food.

5. PLATEAU (D). Idaho, Washington east of the coast range, Oregon except the southern part, the inland part of British Columbia—several dozen tribes speaking languages mostly included in two language families, Salishan and Sahaptian—originally lived in semi-underground earth lodges or large steep-roofed mat-covered houses—salmon, wild roots (camas), berries and some game the main foods—several kinds of basketry the largest craft—travel on rivers and lakes by dugout canoes—moderately complex religious and social organization—in Washington a distinctive art style showing people and living creatures in X-ray outline—later, many traits introduced over the Rockies from the Plains, use of horses, the tipi, skin clothing with beadwork decoration.

6. SOUTHWEST: PUEBLO (E). North New Mexico and northeast Arizona—6 languages spoken, but all groups called "Pueblo" from Spanish word meaning "town"—people living in permanent stone or mud towns, often almost like apartment houses—primary dependence on corn, bean and squash farming for food, with some game—very large development of arts and crafts, weaving in cotton and wool, embroidery, painted pottery in large variety and huge quantity, several kinds of colorful basketry, shell and turquoise jewelry, wood carving and painting—wool and cotton clothing for both sexes, but woven by men—highly complex religious and social organization—long annual series

of elaborately costumed ceremonies, many using highly decorated masks—government by priests of native religion, later aided by elected governor and other officials.

7. SOUTHWEST: NAVAHO-APACHE (E). Arizona and New Mexico—two great tribes related closely in language but differing greatly in way of living. Navaho, (now largest tribe in the U. S., 70,000) in north Arizona and New Mexico—Apache, large bands in central Arizona, south and north New Mexico—both tribes are great horsemen.

Navaho: sheep raisers and farmers—most famous and productive blanket weavers and silversmiths—a little plain pottery and some basketry but no beadwork—single families living in log and earth huts (hogans) widely scattered over an immense reservation—wool blankets and shirts for clothing, with skin knee pants and leggings for men—numerous long elaborate religious and curing ceremonies with masked dancers and large many-colored sand paintings, a major specialty of the tribe.

Apache: wandering hunters and warriors, now largely cattlemen—tall grass-covered huts, wickiups, with some tipis among eastern bands—skin clothing with many tin jinglers, and slightly beaded—basketry the great art—no weaving—a little plain pottery—simple social organization in bands—some religious ceremonies, nicknamed “Devil dances”, with use of masks having great fan-like crests.

8. SOUTHWEST: OTHER TRIBES (E). In central and southern Arizona 8 to 10 tribes belonging to two language families, Piman and Yuman—except for the warlike Yuman tribes along the Colorado River, peaceful, unspectacular corn farmers adjusted to life in the desert—considerable dependence on cactus fruit and fish for food—basketry and pottery important crafts largely produced—cotton weaving formerly by some southern tribes—scanty clothing, mostly bark aprons, some skin and cotton skirts—sandals—dwellings ranged from domed earth and log structures to brush huts—social and religious life rather simple, with unusual development of cremation funeral rites in some groups.

9. PLAINS (F). The western prairies from the Rockies to the Mississippi Valley, and from Texas north into Canada—several dozen large tribes belonging to a number of language families but all able to talk through a common sign language—the very large fighting tribes famed in the development of the West in the 19th century—Sitting Bull and the Custer Massacre—great dependence on the buffalo for food, clothing, shelter and many necessities of life—greatest use of horse for travel—slight use of bull boats (coracles) to cross rivers—the tipi or folding conical skin tent—skin clothing trimmed with angular designs in quillwork, and later, beadwork in the fullest development of that art among Indians—hard-soled moccasins—painting on skin and rawhide very common—use of the eagle feather war bonnet (by these tribes only)—no weaving and almost no basketry—plain pottery very long ago, but extinct for generations—well developed tribal organization under chiefs—the Sun Dance the main religious ceremony—many dancing and age-group societies with wide range of costumes.

Many Eastern Plains tribes did considerable corn farming and lived for part of the year in large permanent earth lodges, using only tipis on seasonal buffalo hunts. This type of life appears to have been more widespread before the coming of the horse (1650-1700). The typical way of life outlined above followed the coming of the horse and was at its height for only about half a century, 1825-1875.

10. GREAT LAKES (G). About a dozen tribes belonging to two language families—the Indians of Longfellow’s “Hiawatha”—forest dwellers using the birch bark canoe for travel on lakes and rivers—domed or conical wigwams covered with rush mats or birch bark—game, fish, wild rice and corn the main foods—skin clothing originally, but European cloth introduced centuries ago—soft-soled moccasin—greatest development of silk applique embroidery—pottery once made, but abandoned long ago—some simple plaited basketry—birch bark vessels important and varied—finely carved wood bowls and spoons—no weaving except twined bags and belts using plant or bark fibers, later wool from the Whites, and great development of wide braided sashes—much beadwork and quillwork using curving or floral designs—considerable silver jewelry, mostly round brooches—generally well developed tribal organization under chiefs—main religious activity the Midé Society.

11. NORTHEAST (H). New York, New England and the adjoining parts of Canada—the Six Nations of the Iroquois in New York, and many tribes of the Algonkin language family north and east of them—the Indians of Cooper’s novels, such as “The Last of the Mohicans”.

The Iroquois, hunters and corn farmers living in great forests—the elm bark longhouse as a dwelling for several families—travel in elm bark canoes—much pottery used long ago—quillwork and later beadwork, in delicate lacy designs—deer skin clothing long ago superseded by European cloth—soft-soled moccasins—no weaving, but braiding of wide wool sashes—excellent wood carving of clubs, bowls, and grotesque masks used in re-

ligious and healing ceremonies, also masks made of braided corn husks—open-work silver brooches based on European forms—greatest development among all Indians of tribal and national government in the League of the Iroquois (1570) a system of representative government under a constitution—great use of wampum (cylindrical purple or white shell beads) for ornaments and treaty belts.

The Algonkin tribes lived much as did those described in Section 10, Great Lakes, though wild rice was not used nor the Midé Society present, but shellfish and maple sugar were important as food—these were the Indians who met the Pilgrims and other early Europeans and gave our language such words as squaw, papoose and wigwam—also the tribes among whom the Dutch introduced wampum (see above) as money—designs in beading, quilling and birch bark based on the double curve, an oval shape with a gap on one side.

12. SOUTHEAST (I). The southern half of the United States from Texas east to the Atlantic. The old life of the southeastern tribes has long disappeared. Most of the Indians were moved to Oklahoma about 1825-30.

Dozens of tribes, some very large, speaking dialects of many language families—in Virginia, Captain John Smith met Pocahontas—villages of cane or rod-and-mud walled huts—extensive development of fishing and corn farming, extensive use of shellfish, with game and wild plant foods as supplements and bear oil an important minor element—dugout canoes for travel on rivers—scanty skin clothing, and use of colorful feather robes; later, adaptations of White clothing with the turban a prominent regional feature—much engraved, and some painted, pottery made, with designs based on the curving scroll—some beadwork using the same scroll designs—wide use of split cane plaited basketry—ornaments of copper, many strings of mussel shell pearls—no true weaving, but considerable plaiting of buffalo wool and plant fibers, and later, braiding of wool sashes, often with interwoven beads—tribal and national organization only second to the Iroquois (Section 11)—harvest dances the main ceremonies, common use of “black drink”, made from Ilex, in ceremonies—400 to 600 years ago much influence from Mexico, producing great pyramid mounds for temples and elaborate art in shell, copper and pottery—Sun worship and a definite royal family, unique in the United States, in one tribe (Natchez).

Text by F. H. Douglas. The following references are basic texts or handy compilations:

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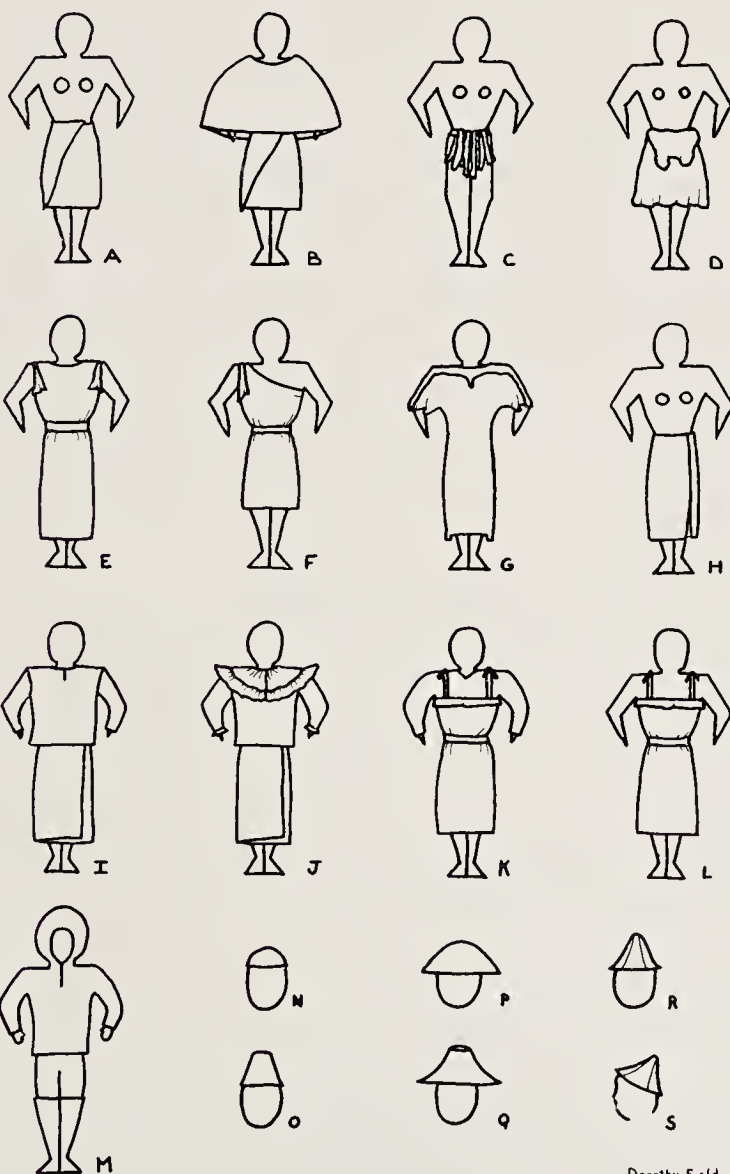
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Dorothy Field

BASIC TYPES OF INDIAN WOMEN'S COSTUMES

LEAFLET 108

DECEMBER, 1950
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1. INTRODUCTION. This leaflet contains a brief description of the 7 major types of Indian women's clothing found north of Mexico. Space does not permit dealing with the many subdivisions of each type, or with detailed geographical distributions. The notes are on basic Indian garments uninfluenced by the Whites. All of these types are now gone or rare, though some persist in the form of garments part Indian, part White, in origin. Details of fringing and varieties of ornamentation are not given. Special types of ceremonial dress are not considered.

The various major types shade into one another along border lines of the areas, for example, types 6 (K, L) and 7 (M) once penetrated the area of type 5 (H, I, J) to some extent. Also, there were influences back and forth with all sorts of resulting variations. Lack of knowledge of long vanished styles further complicates adequate description. References 1, 2 and 3 discuss at great length the styles which are briefly outlined in this leaflet.

2. NORTHWEST COAST WRAP-AROUND (A). Along the Pacific Coast from California north through Southeast Alaska the basic woman's costume was a short wrap-around skirt, sometimes so short as to be little more than a kilt. Depending on local raw materials it was made of woven or shredded cedar bark, mountain goat wool in long thick fringes, skin or fur. Regularly and continuously used upper garments were not worn, but blankets and cape blouses (B) of woven cedar bark were frequently worn, sometimes replaced by fur or skin robes or shirts and blankets of woven mountain goat wool.

This type of costume is now entirely extinct.

3. WESTERN FORE-AND-AFT APRONS. In California, Nevada, Southern Oregon west of the coastal ranges, Utah, Arizona (except the Pueblo area) and New Mexico (except the Pueblo area and north and east edges, see paragraphs 4 and 5), the basic costume was a pair of aprons, one in front and one in back. The basic pattern varied from little more than tufts of leaves or cat-tails (Southern California) (C) to complete body coverings (Navaho) (E). In the simplest varieties the front and back aprons had no connection other than the belt, while elsewhere the aprons were large skin panels sewn together on the sides (Western Apache) (D) or blankets from neck to ankle (Navaho) sewn along the sides (E). In California and elsewhere in the region north of Arizona-New Mexico plant materials were used (except extreme north California where skin was worn). In the Southwest the Apache and Havasupai used skin; the Navaho, native made wool blankets; the Piman and Yuman tribes, shredded bark. The Yuman dress was a full skirt covering the thighs, an exception to the fore-and-aft custom, though among the Yuma tribe specifically the skirt was very thin on the outside of the thighs, almost approximating front and back aprons. Maricopa and Pima-Papago were also exceptions in their use of wrap-around skirts of native cotton cloth, sometimes skin.

With a few exceptions (Apache, Havasupai and Navaho) upper garments were lacking or rare, though robes or blankets might be worn in bad weather.

This type of costume survives only among the Mescalero and Chiricahua Apache who use it at girls' puberty ceremonies.

4. PUEBLO FOLDED CLOTH RECTANGLE. Among the Pueblo tribes of Arizona and New Mexico the basic costume was a rectangle of cloth (F) (cotton in pre-Spanish times, black wool thereafter) folded in half across the width and wrapped around the body so that the fold was on the left side of the body, from the left armpit down to below the knee, with the upper corners pinned over the right shoulder; and the edges, running down the right side of the body, held together by a cloth belt.

This costume is worn today during ceremonies, though most frequently there is now a cotton dress under the folded rectangle. In a few old conservative Hopi villages some old women wear the dress alone as in earlier days.

5. PLAINS LONG SKIN DRESS. On the Plains from the Mississippi to the Rockies between Texas and the southern parts of Alberta and Saskatchewan, Canada, west into Washington east of the coast range; and among the Jicarilla Apache in the north and east of New Mexico, the basic female costume was a neck-shoulder to ankle dress of skin, usually deer (G). Two skins were laid on each other, tail ends at the top. The upper edges were sewn together except at the neck hole; and on the sides from the waist down. The hind legs formed cape-like sleeves. There were many tribal variations, as well as changes in detail at various periods. Leaflet 109 gives additional details about this type of woman's dress.

This long skin dress is still worn to a considerable extent on holiday and ceremonial occasions. It is the best known variety of Indian woman's dress and in movies, book or magazine illustrations and the like, it is often shown on any kind of Indian without regard for correctness.

6. EASTERN WRAP-AROUND SKIRT. In prehistoric and early historic times (up to perhaps 1750 in some places) the basic woman's dress east of the Mississippi, except in the extreme northern United States, was a knee or calf-length wrap-around deer skin skirt (H). The edges barely met on the left thigh so that the type is sometimes called a slit skirt. Also, in the southern states, there were skirts of Spanish moss. There were tribal and regional variations in length and decoration, but in general the type was very standard. Upper garments were definitely uncommon, though various forms existed. Skin ponchos or simple shirts seem to have been the most usual type. But considering the area as a whole it was definitely not standard practice to wear any upper garment other than skin or fur robes if the weather was bad.

This type of costume persists today in cloth to a considerable extent, with the addition of a blouse. There are two main blouse types, a perfectly plain square cut pattern (I), and one with a large ruffled round bertha collar (J). Both have full length rather tight sleeves and short tails worn outside the skirt.

Variations of this costume today are worn by many eastern tribes on formal or ceremonial occasions. They are most common from Oklahoma up the Mississippi to the Great Lakes.

7. NORTHERN SLIP-AND-SLEEVE DRESS. Along the Canada-United States border, mostly in Canada, from the Rockies to the Atlantic there was once found another basic type of dress. It had detachable sleeves and a long slip-like skirt hung from the shoulders by straps and reaching to well below the knee (K). In warm weather or indoors the sleeves were removed (L). Some sleeves (Naskapi) were all in one piece covering the upper chest and back; while others were only connected across the back by cords (Great Lakes). In New England and thereabouts one detachable sleeve was

worn, with the bare arm covered by a skin robe. The older dresses were deer skin but commercial cloth long ago replaced skin everywhere. Skin persisted longest—up till about 1890—among the Naskapi of Labrador.

A few costumes of this type may still be found among the Great Lakes tribes, but generally speaking it has been abandoned in favor of White clothing.

8. ESKIMO TAILORED CLOTHING. Among the Eskimo ranging in a more or less continuous band across the North from East Greenland to the tip of Siberia the basic woman's costume is a combination of fur or skin trousers with the long shirt-like hooded upper garment usually called a parka (M). The fur or skin is well tailored and carefully sewn to fit the wearer, in contrast to the practically complete absence of tailoring in all other types.

This parka-and-trousers combination has many regional variations which cannot be discussed here. Today the costume is still widely used, though there is some intrusion of commercial cloth.

9. UNDERWEAR does not seem to have been used with native Indian women's costumes, though in the Far North there is some use of skin under-pants, and considerable use of breechcloths.

10. HEADGEAR was extremely uncommon among Indian women. They did not wear the Plains eagle feather war bonnet except under certain rare circumstances. The bead headband with the upright feather behind is a modern child of the movies and romantic fiction for it does not appear in early photos of Indians wearing native costumes.

Bowl-shaped basket caps were worn by many tribes in the United States west of the Rockies (N & O). Oriental-looking basket hats were worn on the Northwest Coast (P & Q). Naskapi and other northeastern women wore a peaked skin or cloth cap (R & S).

11. FOOTGEAR, LEGGINGS AND BELTS were worn in tremendous variety. This leaflet is too brief to discuss these accessories.

Compiled by F. H. Douglas from examination of the great collections and from the following sources:

AMERICAN MUSEUM OF NATURAL HISTORY

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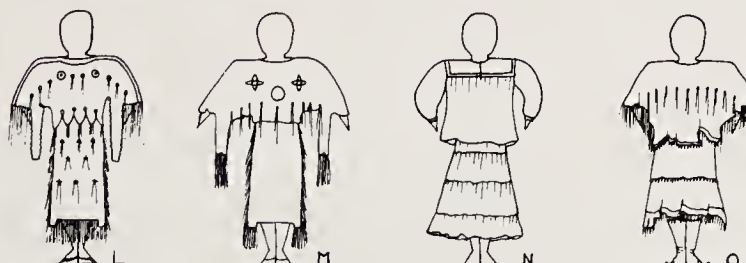
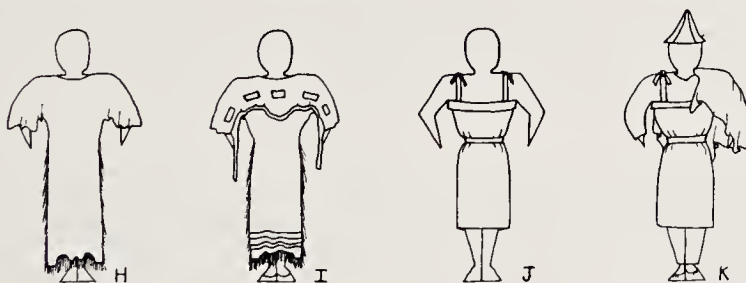
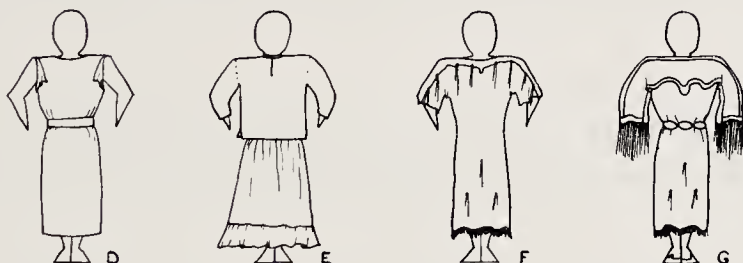
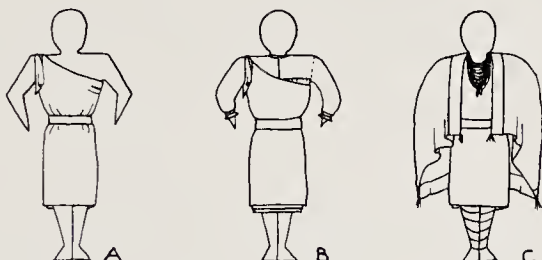
DENVER ART MUSEUM

1300 LOGAN STREET, DENVER, COLORADO

DEPARTMENT OF INDIAN ART

RICHARD G. CONN, CURATOR

FREDERIC H. DOUGLAS, EDITOR



Dorothy Field

INDIAN WOMEN'S CLOTHING: Fashion and Function

LEAFLET 109

DECEMBER, 1951
2nd Printing, March, 1956

1. INTRODUCTION. This leaflet is designed to give some idea as to the workings of clothing style change among Indian women: of the existence of clothing for different purposes; and about how these differences are produced. The basic styles constantly referred to are described in Leaflet 107.

2. CHANGE IN FASHION exists among Indian women, but moves very slowly because of the absence of commercial pressure and the natural conservatism of the people. Changes occur most prominently in detail rather than in the basic design. These changes in detail in turn are related to the introduction and availability of new materials which can be combined with old basic styles or decorative details. White influence has been a strong factor in fashion change since its inception 450 years ago but has varied considerably in importance, and by geographical or tribal areas. (This text is not concerned with style changes involving the clothing entirely of White origin worn by practically all Indian women today, but only with the purely native clothing, alone or in combination with White elements.)

It is difficult to evaluate changes which have been due to intertribal influence in a short leaflet. Dislocation of tribes due to the coming of the Whites has definitely been a factor, however. An example is the introduction of the fashion of wearing silver ornaments into the southern Plains and, by later extension, the Southwest, following the arrival of the New Jersey Delaware in Texas in the 1830's.

Another factor is the custom of the "give-away" which frequently introduced articles of clothing from one tribe into another, thereby potentially changing the styles of the receiving tribe. A "give-away" is a social function at which presents are given to family, friends and visiting guests.

Intertribal marriage must also have been instrumental in bringing about style change. A talented Cheyenne woman, for example, marrying into an Osage band would almost certainly result in a style change of a minor nature which might become firmly established.

A difficulty in determining the details of style change is the uncertainty about the identification of clothing and other specimens in museum collections. Formerly—and too frequently today—specimens were assigned to the tribes among which they were collected. Thus, what may appear to be a new style in a tribe is actually a dress from another tribe obtained by capture, trade or give-away. In addition to this difficulty there is a fundamental lack of knowledge about clothing of many tribes at different periods.

3. EXAMPLES OF STYLE CHANGE. Among the Pueblos the old black wool dress (A) is now worn over a sleeved cotton underdress, often with a lace edged petticoat showing below the skirt (B). At Zuni one woman, some 50 years ago, introduced a new style. The Hopi woman's dress with diamond weave edges was, through the influence of this woman, adopted in preference to the local embroidered dress. In the 1870's Navaho women abandoned their native wool blanket dress (D) in favor of the very wide full cotton skirts worn by White women of the period (E). About 1900 the introduction of a new material, velveteen, resulted in a new type of shirt among both Navaho women and men (E).

On the Plains there was everywhere a substitution of commercial cloth for skin, with small detail changes in style because of the new material, but

the retaining of the basic cut. At present it is the style for young women of Southern Plains tribes to wear long, very white, skin dresses on formal occasions. Dresses of this type do not appear in old collections and photographs.

Many Great Lakes tribes created a new style by the adoption of silk as a medium, through appliqué embroidery, for use of the ancient quill and birchbark designs on skin or cloth dresses.

Among the Iroquois the ancient costume was a long wrap-around deer skin skirt. When European cloth became available it was used for the skirt, still as a wrap-around. An upper garment, previously lacking, was evolved in the form of a long calico tunic. The front of the tunic was taken from the costumes of White women, while the back was adopted from the court coats of European male officials. Thus, by combining various different elements, the Iroquois woman created a new dress style for herself.

4. FUNCTION IN CLOTHING. Much more clearly established in the field of Indian women's clothing than style change is the use of different costumes for different occasions. Provided she is not reduced to ultimate poverty, no Indian woman will go to a social function in a work dress, or vice versa. Equally clear in many cases is the differentiation between formal dresses for social or religious wear. There naturally existed variations in dress to suit weather changes.

On the whole the difference between a work dress and a formal dress lay in the addition of parts or ornamental features to the work dresses. These latter were the equivalent of the "basic dress" of our fashion designers, one which could serve for various purposes if worn or decorated in differing ways.

Changes in function seem to have been less affected by White influence than style variation. There is abundant evidence that dresses of different types were being worn by many tribes before White influence made itself felt. In the better accounts of tribes at the time of first White contact there are descriptions of clothing which clearly indicate this custom.

5. EXAMPLES OF DIFFERENCE IN FUNCTION. The Jicarilla Apache work dress was a long, perfectly plain and unornamented deer skin costume (F). It was quickly made into a formal dress by adding an elaborate oblong cape-poncho of skin colored with earth paints and trimmed with beads. Beaded boots rather than plain ones, and perhaps a Navaho silver belt, completed the change (G).

Pueblo women changed their black wool house dress (A) into a formal by wearing in addition an embroidered shawl of white cotton, high white puttee boots and masses of jewelry (C).

On the Plains the basic dress was long neck-to-ankle affair with little or no decoration (H). For formal wear a dress of the same cut, but heavily beaded on the bodice and at the bottom of the skirt, was worn (I).

As an example of adjusting the dress to the weather, the Naskapi of Labrador may be cited. The basic dress of this tribe was a painted deer skin slip sustained by shoulder straps (J). To make this costume wearable in winter a unit made of sleeves and covering for the chest and shoulders, or separate sleeves, was put on under the straps of the slip. A robe of caribou skin and a peaked skin hat finished the transformation (K).

Among the Kiowa there was a clear differentiation between a formal dress for social uses and one for religious wear. Both were of deer skin, but the social dress with its skin tabs and fringes, and bead medallions and pendants has a somewhat frivolous air (L). The religious dress, in contrast, achieves an impression of solemn dignity by its white simplicity, sweeping fringes and lack of ornamentation save for a few delicately painted stars and moon on the bodice (M).

The Mescalero and Chiricahua Apache illustrate a change of another sort. The former skin clothing of these women was long ago abandoned in favor of a sweeping cloth skirt and blouse combination known as a "Mother Hubbard" (N). But when their daughters come to marriageable age they are introduced to society in a two-piece debut dress of deer skin trimmed with metal jinglers, fringe and colorful beadwork (O).

6. MODERN WOMEN'S CLOTHING. Today the native dresses are nearly extinct for daily wear, only surviving to some extent for ceremonies or for wear at Indian fairs, rodeos and the like. Most Indian women dress exactly, or approximately, as White women do. Only moccasins persist in some quantity for daily use, and many young Indians have given up even these. Mail order catalogs and the beauty parlors have left little of the aboriginal Indian but her features and coloring.

Compiled by F. H. Douglas from examination of the great collections, observations in the field, and study of many old dated photographs. Book references to the subject are so slight and scattered that no reference list is given.

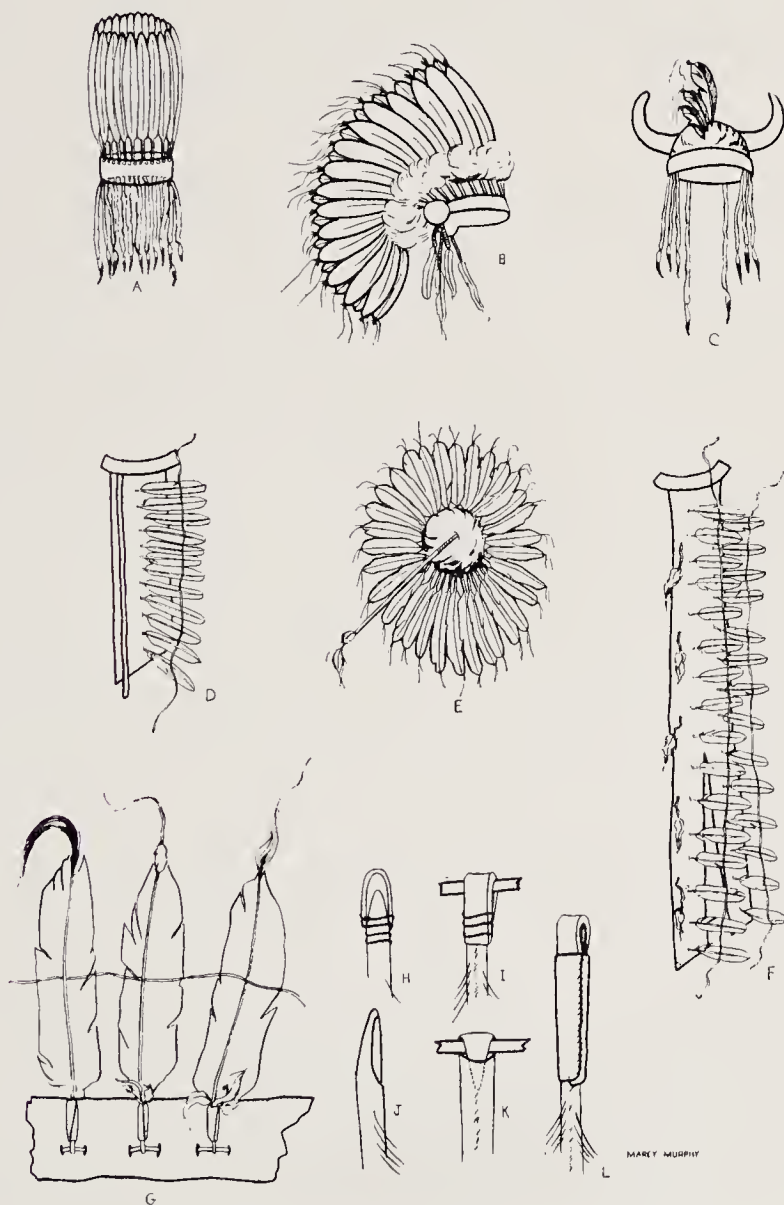
DENVER ART MUSEUM

1300 LOGAN STREET, DENVER, COLORADO

DEPARTMENT OF INDIAN ART

RICHARD G. CONN, CURATOR

FREDERIC H. DOUGLAS, EDITOR



WAR BONNETS

1. INTRODUCTION. This leaflet is concerned with a brief discussion of the large eagle feather headdress worn by the Plains tribes, and commonly known as the "war bonnet."

2. HISTORY. The historical development of the war bonnet has been almost completely neglected so that the suggestions in this section are highly tentative and not much better than likely guesses.

The oldest definitely dated picture of a war bonnet is a colored sketch made between 1732 and 1735 by A. deBatz of a Choctaw in Louisiana. This sketch is now in the Library of the Peabody Museum at Harvard University. The oldest definitely dated specimen is one collected at Ft. Leavenworth, Kansas, in 1838 and now in a New York museum. Drawings and paintings by Whites and Indians made on the Plains in the early 1830's show the war bonnet fully developed.

A positive statement can only be made, therefore, that the war bonnet existed in the mid-1700's; and was fully developed and widespread by the 1830's.

It is suggested that the war bonnet is descended mainly from the feathered brow band worn by many tribes along the Atlantic coast in the period of discovery (16th century) as shown in contemporary pictures. It is known that tribes speaking Siouan languages lived in the East and later moved west, reaching the Plains several hundred years ago. Possibly combining this head band with a skin skull cap used by the Plains Apaches of the period, the Sioux developed the war bonnet, especially after the horse was introduced in the late 1600's. The treeless prairie was ideal for the wearing of a huge feather crown; and also was perfect for the use of horses. Thus it is suggested that the combination of all these circumstances led the Sioux to create the full-blown war bonnet. It is certain that the Sioux were the center from which the war bonnet spread to other tribes.

3. VARIETIES AND DISTRIBUTION. Most war bonnets are of the "swept back" type with the feathers on the cap leaning toward the rear (B). This is the type of the central and southern Plains. Among the Blackfoot to the Northwest is found the "straight-up" type which lacks a cap and has the feathers standing upright from a wide head band (A). A third variety, seemingly found mostly among the eastern Apache, is one on which the feathers slope out evenly all the way around (E).

The main added feature is the trail, a strip of skin or cloth hanging down the wearer's back from the rear edge of the cap. It may have one row of feathers, the "single trail" (D); or two, the "double trail" (F). The trail is often entirely absent. The trails are used on bonnets all through the Plains area.

A related headdress is the "doctor's bonnet" (C) which has a trail but no row of feathers on the cap, substituting a pair of horns on the cap sides, and often a fan of feathers running from front to back. The "doctor's bonnet" is mostly a Central Plains trait.

4 USE. The war bonnet was worn only as a symbol of recognition of skill and success in war: not by any man, and never by a woman except under certain rare ceremonial circumstances. It was often considered to have magic protective power.

A warrior was customarily awarded a war bonnet by action of the tribe or band. Sometimes a boaster would be given a bonnet by the women and thus forced to back up his claims by action. Sometimes, also, a youth would make himself a bonnet, then prove his right to it by warlike deeds.

The bonnet was worn during battles or raids, and also as part of the full dress costume on peaceful occasions.

Space does not permit discussion of the symbolism of the feathers beyond making the general statement that they stood for war honors of either the wearer, or of all the men who awarded him the bonnet.

CONSTRUCTION

5. BASIC PARTS. A war bonnet—except the “straight-up” type—consists of a skull cap, a decorative brow band, large eagle feathers, a trail—sometimes omitted—and various decorative accessories.

6. THE CAP, in former times, was made of deer skin or buffalo skin, but for at least 100 years a commercial felt hat, with the brim cut off, has often been substituted. If of skin the cap may be made of several pieces sewn together.

The top of the cap, within the outer circle of feathers, may be decorated with down, single feathers, or strips of fur or cloth, alone or in combinations. A long feather, stripped except at the tip, is often attached to the crown of the cap and rises above the outer row of feathers (E). This is usually called the “commander” feather.

7. THE BROW BAND is a strip of skin or cloth, 1 to 2 inches wide, sewn to the edge of the cap above the forehead and reaching back to the ears. It is usually trimmed with beads sewn in a pattern. Rarely porcupine quillwork is used for trimming and in one case, a bonnet collected in 1865, the brow band is a strip of buffalo skin with the hair in place.

At the ends of the band, over the ears, there may be attached small beaded circles, ribbons, strips of red cloth, strips of ermine or other fur, thimbles, little bells, single large feathers, or buffalo horns, one on each side. A rare early Sioux type has four horns, one each at front, back and sides.

8. THE TRAIL is a band of skin or cloth, usually red wool, 8 to 12 inches wide and of varying length. A “half trail” (D) reaches to the waist; a “full trail” to the ankles, or even to the ground (F). A “single trail” (D) has one row of eagle feathers from top to bottom, or near the bottom. A “double trail” (F) has two such rows parallel. Usually a double trail is split in the lower half or more of its length.

In addition to the main row or rows of tail plumes single smaller feathers are frequently attached to thongs tied to the trail, generally along or near the edges. Hawk, owl, dove, raven, magpie and prairie chicken feathers are used in this way, among others. Occasionally there are ribbons, beaded edgings or small units of beadwork on the trail.

9. MAIN FEATHERS. Around the edge of the cap are attached (as described in section 10) a row of large eagle feathers. Twenty-four is the average number, but in 200 bonnets the range was 16 to 38. The most favored plumes are those from the tail of the golden and bald eagles. Sometimes the long slender, dark, primary and secondary feathers from the ends of the wings are used. There are rare references to the use of other feathers, raven, hawk and turkey, for example.

The trails, either single or double, are commonly decorated with eagle tail feathers. A very large Sioux double trail bonnet has 116 tail feathers, 58 in each row. It has 28 plumes on the cap, making 144 in all. Ordinary bonnets have 20 to 40 feathers on a single trail, 80 to 100 on a double trail.

Bonnets with long trails were made for use on horseback. When the wearer was on foot he held up the trail with a cord, as Victorian ladies did the trains of their long formal dresses.

FEATHER ATTACHMENT DETAILS

10. ATTACHMENT TO CAP. The feathers are attached to the edge of the cap as follows: a line of holes is made around the edge of the cap to receive a long skin thong. A loop is made on the butt end of each feather, most commonly by tying or lacing a narrow strip of rawhide over the butt so

that it protrudes past the butt far enough to make a threadable loop (H, J). A second method is to cut away the butt in a long slanting bevel (J), fold the remaining end on itself and insert it up in the shaft to form a loop (K), held in place by a sinew or thread binding around the shaft. The loop and end of the shaft are usually wrapped in red trade cloth for about 2 inches (L). A feather thus prepared is then placed between 2 holes on the cap rim and the thong passed through the loop (G). The process continues till all feathers are so attached. There are other uncommon methods of looping which cannot be described here for lack of space.

Feathers are fastened to the trail in the same manner. A thong passes over and under through holes in the cloth or skin and catches loops on the plumes.

Holes are then made through the shafts of the feathers, 4-6 inches from their tops. A second thong, called a spacer, is threaded through these holes (G). The thong ends are tied so that the feathers are evenly spaced and stand more or less upright. Attached in this manner the feathers can move quite freely in the wind.

Small fluffy plumes are frequently bound to the butts of the feathers under the red cloth mentioned above. On the tips of the feathers are glued thin strands of horse hair 3-6 inches long; and often small fluffs (G). The horse hair usually may be dyed red or yellow, or may be natural white or black. Small bits of short streamers of ermine fur, occasionally otter—may be pasted with rosin to the feather tips along with the horse hair.

11. BLACKFOOT "STRAIGHT UP" BONNET. This is not constructed as the ordinary bonnets described above. There is no cap, only a broad head band. The feathers are tied to this band so that they are fixed stiffly erect like the pickets in a fence and not movable as are those of the usual bonnets. There is no spacer thong part way up the shaft. Along the shafts of at least some feathers are sewn narrow strips of rawhide wrapped with porcupine quills. From the bottom edge of the headband, except over the face, hangs a long thick fringe of white ermine fur stripes or rolls (A). There is no separate brow band, but instead pieces of ermine are usually sewn or glued to the band.

It is suggested that this Blackfoot form is a glorified version of the simple feathered head bands of the Eastern Algonkin tribes. The Blackfoot belong to this language family and once lived far to the East in the forests of south central Canada. On their migration to the Plains they may have greatly elaborated the simple band of their ancestors, perhaps after contact with other tribes on the Plains who had already had the standard war bonnet. All this is, however, conjectural.

12. MODERN TIMES. So widely known and publicized has the war bonnet been that many tribes which never wore it in former times now appear in Plains war bonnets. It is worn by men and women alike without regard for the old rules, almost like an official uniform.

The war bonnet of stage, screen and the publicity drive has steadily increased in size, fanciness, use of garish color and trimming. Except for the very oldest Plains people it has lost all meaning and now is merely a vague general symbol of the Indian. An Indian has to wear one to convince tourists that he is an Indian! Tribes which never even heard of war bonnets now greet their visitors in them; and "Princesses" in war bonnets smile from every Sunday rotogravure.

Compiled by F. H. Douglas from the examination of over 300 specimens and from the following references:

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DENVER ART MUSEUM

IN COOPERATION WITH
THE DENVER PUBLIC SCHOOLS

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NORMAN FEDER - Curator



KACHINAS AND KACHINA DOLLS

LEAFLET 111

Reprinted July 1967

DECEMBER, 1951

1. **KACHINA** (kah-chée-nah) is a word in the Hopi (Hó-pee) Indian language. There are various spellings (katsina, kalcina, katzina, catcina) all pronounced alike.

2. **USE OF THE WORD.** Kachina is used by the Hopi in three ways: as a name for a large class of supernatural spirits; for masked dancers impersonating these spirits; and for small painted wood dolls carved in the likeness of the masked dancers (see cover).

The word has long been used in English and also by practically all other Pueblo Indians.

3. **KACHINA SPIRITS.** The Hopi believe that these beings, numbering at least 250, live during half of the year (July to January) on San Francisco peak and other high mountains in Arizona, and spend the rest of the year, January to July, with the tribe in its 9 villages on high plateaus in northeast Arizona. They are believed to serve as connecting links between men and the very important gods. Most of them are thought of as friendly helpful beings, but some are ogres and monsters. There are both male and female spirits.

4. **KACHINA DANCERS.** Through the winter and spring the Hopi have 5 main religious ceremonies, each lasting 9 days, and a larger number of smaller ones lasting 1 day. At these ceremonies there appear men wearing masks representing male and female kachina spirits. In general these masked performances are of two types: in one, a line of dancers, all in the same costume appear in a village square and repeat a few simple formations many times through a day; in the other, men wearing masks of many types are all over a village, sometimes dancing, sometimes visiting houses, etc. in small groups.

5. **MASKS AND BELIEFS.** The Hopi believe, as do other Indians, that when a man puts on a mask representing a spirit he becomes that spirit. The people, especially children, are not supposed to recognize dancers as friends or relatives, but only to see in them the gods come to visit.

Structurally the masks are of two types: those covering only the face in whole or part; and pail or helmet shaped ones covering the entire head. These basic forms are decorated with paint, feathers, fur, horns, eyes, noses and other trimmings in bewildering variety. Reference 5 gives full details. For comparative notes see Leaflet 65-66.

The masks are the important parts of the dancers' costumes and show the greatest variation. With some exceptions the rest of the costume is the same for any kachina and is made up, for male dancers, of moccasins stained red-brown or green, and an embroidered cotton kilt held in place with two wide belts which also support a fox skin hanging from the waist behind. Bodies and legs are bare and painted in various designs. Those who take female parts wear the ordinary black wrap-around dress with a red wool belt of the Pueblo woman, several types of shawls, and usually high white deer skin boots.

6. **KACHINAS IN OTHER PUEBLOS.** Belief in kachina spirits, and the custom of impersonating them by masked dancers, are common in nearly all of the pueblos. The cult is strongest among the Hopi and Zuni at the west end of the Pueblo area, and decreases in intensity as one moves east, to disappear before reaching Taos and Picurís (San Lorenzo), the easternmost of the Pueblos.

In the Hopi villages and at Zuni the outdoor masked dances are open to visitors, though ones held indoors in kivas (keé-vahs), rooms set apart

for ceremonies, are closed to the public. In all other pueblos, however, masked dances are all closed to non-Indian spectators even if held outdoors. The only dances which can be seen in these villages are those in which kachina masks are not worn.

7. MASKS IN ANTIQUITY. It was once thought by some scientists that masks for kachinas were introduced by Indians from Mexico who entered the Southwest with the Spanish. But the discovery of two sets of prehistoric wall paintings in underground ceremonial rooms disproved this theory. These paintings show figures wearing masks, in some cases identical with those in use today. Spanish missionaries tried unsuccessfully to outlaw masked dances, but the kachina cult with its masks is still firmly established and active.

8. KACHINA DOLLS are small carved and painted wood images representing the masked kachina dancers. The Hopi word tihu (teé-hoo) is sometimes applied to them. (See cover.)

9. HISTORY. Present incomplete evidence indicates that the custom of making these dolls is rather a modern one. The oldest ones which can be definitely dated were collected as recently as 1879. Though thousands of perfectly preserved wooden objects have been found in prehistoric ruins, not one of these is a kachina doll. The Spanish authors do not mention them, at least in terms recognizable to us. How, when and where the custom of doll-making began are entirely unknown, but Hopi men have stated that many of the kachinas were developed in the later 1800's. The idea of kachina spirits and masks is ancient, but the making of dolls seems to be less than 100 years old.

10. MANUFACTURE. The dolls are normally made of cottonwood root, a soft white wood common in the Southwest. They are carved with pocket knives, chisels, saws, etc. of White manufacture. Ears, noses, horns, head-dresses, etc. are usually separate pieces attached with glue or tiny dowel pins. Feathers are tied on with cotton string and the complex designs of the different masks are painted on. The heads are carved as though the masks were in place. Formerly native mineral colors were used after a coat of white clay had been applied. But for many years commercial poster paint or opaque water colors have been used. Reference 5 has a series of color photos showing the steps followed in making dolls.

11. MAKERS. Any man may make the dolls, but usually the work is done by older men who become expert in the craft.

12. STYLE CHANGES. Dolls made before or around 1900 are very simple in form, with cylindrical or oval bodies and heads and sausage-like arms or legs. (C, K and L). The heads are always much oversize, even more than masks would make them. Poses were stiff and only life-like to a very limited degree.

As time passed realism developed more and more. I, J, K are dolls made about 1916 which show signs of these changes. Now heads are often natural size, and body proportions and limbs are quite natural in appearance. In addition to their life-like look modern dolls show brighter and more detailed painting than was formerly done. The technic of carving is much finer in recent dolls (D and H) than old ones. D and H were made in 1948.

On the older dolls sex organs were often indicated, though not breasts. (L). These details are no longer carved.

13. SIZE RANGE runs from 2 or 4 to 24 or, rarely, 30 inches or more. The average doll is about 8-10 inches high. Much of the height of the taller dolls is due to the very large flat headdresses (B) usually called by the Spanish word *tablita* (tab-lée-tah). (B is 14 inches tall, E is 2 inches.)

14. PURPOSE. The dolls are definitely not idols, nor are they made specifically to be used as playthings. Their purpose is to teach children something of the practices and beliefs of the native religion and with this in mind they are hung from the rafters or otherwise displayed in the home. In actuality they often serve as toys, for the little girls carry them like doll babies, play house with them, or bang them around till they are reduced to ruin.

The dolls are made before the major masked dances mentioned in section 4 and given by the kachina dancers to children during intermissions, along with food and other gifts.

15. VARIETY is too great for even listing in this short leaflet. The cover picture shows some of the main types. Reference 5 gives a systematic breakdown of all classes.

16. DOLLS AT OTHER PUEBLOS. The custom of making kachina dolls is also followed at Zuni, but only with extreme rarity in other villages. Zuni dolls (A) can easily be distinguished by having movable arms and garments made of actual cloth, not just shown by painted designs on the wood as the Hopi do. Reference 2 gives many facts and pictures about Zuni kachinas.

17. IMITATIONS. In recent years crude dolls made by roughly carving 2x4's have been made for sale. The flat sides make them easy to recognize. Very small dolls for lapel pins and a whole range of other sizes are made for the tourist trade (E and G). Some of these are of fine quality but have no connection with the original use of the dolls as gifts for children at great masked ceremonies. Except for the crude 2x4 types and the very small examples it is, however, hard to tell what might be called real kachina dolls from those made for sale.

Compiled by F. H. Douglas from examination of many collections and from the following references:

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DENVER ART MUSEUM

1300 LOGAN STREET, DENVER, COLORADO

DEPARTMENT OF INDIAN ART

NORMAN FEDER - Curator

MISTAKEN IDEAS ABOUT INDIANS

LEAFLET 112

DECEMBER, 1951

Reprinted July 1967

1. INTRODUCTORY. White Americans have been in contact with Indians for nearly 500 years and in that time have built a tower of misbeliefs about our natives. Each one of the following headings concerns some wrong idea which is firmly believed by practically everybody. This leaflet attempts to make it possible for those who wish the facts to obtain them.

2. THE VANISHING INDIAN is not vanishing. From an original population of about 1¼ million north of Mexico the Indian decreased to about ¼ million by the 1890's. Since then he has been steadily increasing. The present Indian population of the United States and Canada is at least ½ million.

3. LANGUAGE. Indians do not speak "Indian," a simple grunting language used by all tribes. In the United States alone dozens of languages are still spoken. Some are related, others are as different as English and Chinese. Most have grammatical structures much more complicated than English. All use thousands of words. See Leaflet 51-52.

4. SIGN LANGUAGE. All Indians did not talk to each other with a common sign language. This method of communication by arm and hand gestures was used only by tribes in the Plains area and some bordering areas. After the introduction of Spanish horses around 1650, many tribes with different languages came together for the first time. Sign languages were developed then.

In other areas jargons or trade languages, like the Pidgin English of the Orient, were developed. In the northeastern quarter of the country a simple variety of the basic Algonkian speech was used, while in the Southeast a dialect of Choctaw called Mobilian was spoken intertribally. In the Southwest and much of California, Spanish was used to a considerable extent after 1600. In the Northwest the trade language was Chinook, a concoction of several European and Indian tongues.

5. THE INDIAN WORD FOR CRADLE. Perhaps the most common question asked by the public in an Indian museum is about one universally used Indian word for "cradle" or "baby-board." The answer is simply that there is no such word. All of the dozens of Indian languages have one or more names for the baby-carriers. No one of these words has ever gotten into general use as did "squaw" and "papoose," the words for woman and child in the speech of the Massachusetts Indians. A long list of Indian words for cradle is printed in Volume 18 Number 3 of the Colorado Magazine published in 1941 by the State Historical Society of Colorado.

6. SYMBOLISM. All Indian designs are not symbols which can be read to find meanings. Most Indian designs are just for decoration. When they are symbols (designs made to stand for a person, thing or idea) the meaning is, with rare exceptions, known only to the maker. An Indian of one tribe cannot interpret the designs of any or all others unless specifically trained. See Leaflet 61.

7. ALL INDIANS ARE SMALL. This idea is very widespread and has no relation to the facts. Some of the largest as well as some of the smallest people in the world are Indians, with all sizes in between. Possibly the notion grew from the fact that hundreds of thousands of people have never seen any Indians but the little Pueblo women on the station platforms of the Santa Fe railroad in New Mexico.

8. THE DIRTY INDIAN is dirty either because the White man made him so, or because he lives in desert areas where there is hardly enough water to drink. Early explorers speak again and again of how frequently the Indians bathed in streams and lakes. As the White man conquered the Indians he pushed them off into desert areas, then robbed and swindled them to the point of starvation. Under such circumstances no one of any race is much interested in bathing. Indians living under modern conditions are as clean as anyone else.

9. THE LAZY INDIAN. Under native conditions Indian women ran the house and family by working steadily but not hard. Men hunted for food and had to be ready at all times to defend their people against ever-present enemies. Hunting and fighting require short periods of extremely violent effort. The total amount of work done by men and women was about the same.

Then the conquering White man took away both of the activities of Indian men—and gave him nothing to replace them. Women's work, on the other hand, remained about the same. After Indian men learned new trades and occupations they proved to be industrious workers.

10. BLANKET INDIANS. All Indians do not, nor ever did, wear native woven blankets from the cradle to the grave. Blankets were only woven by the Pueblo and Navaho Indians of the Southwest, by a number of small tribes in the general region of Puget Sound in Washington and British Columbia, and by a few tribes in southeast Alaska. Elsewhere Indians wore many kinds of animal skin robes.

Eventually many tribes received and wore machine-made blankets introduced by the White man.

11. WIGWAMS. All Indians did not live in wigwams. This word applies only to the bark- or mat-covered huts of some tribes in the northeastern United States. Indians in other parts of the country lived in a wide variety of other dwellings. Leaflets 9, 12, 19, 20, 34, 39, 42, 48 and 50 give details about some of them.

12. BIRCHBARK CANOES were made by only a few tribes along the extreme north of the United States from the Atlantic to the Great Lakes region; and by some Canadian tribes. In the eastern United States south of this region most canoes were log dugouts, with a few of elm bark. No canoes were used on the Plains or in the Southwest. In southern California a few plank canoes were used. In northern California and up into Washington dugouts were made from logs. The Indians north of Washington on the coast of British Columbia and southeast Alaska made dugout canoes for travel on the sea, some as long as 65-70 feet.

13. WAR BONNETS. The war bonnet is a headdress made by setting an upright row of eagle feathers around a skin cap. There is often a feather-mounted strip hanging down the wearer's back.

This headdress, the most famous article of Indian make, was worn only by men belonging to tribes on the Plains between the Rockies and the Mississippi valley; and by some tribes bordering this area. It was not worn by women, nor in any other section of the United States. See Leaflet 110.

14. WOMEN'S BEADED HEAD BANDS. The combination of a band of bead-work around the forehead with an eagle feather sticking up behind is a very

modern addition to Indian women's costume. Some Indian girls wear it today, perhaps after seeing calendar pictures, movies and cartoons, but there is no trace of it in hundreds of old photographs and pictures of Indians living in a more or less native manner. Where the idea originally came from is not known to me.

15. TOTEM POLES were made only by a few tribes living on the Pacific coast and neighboring islands of British Columbia and southeast Alaska, the narrow strip running down the coast from the main mass of Alaska. Totem poles were not idols and had nothing to do with religion. They were made to show family names and legends and to mark graves. See Leaflets 79-80.

16. WAMPUM is a word perhaps more misunderstood than any other used in connection with Indians. It is derived from 'wamp-ompe-ag,' meaning 'it is made of shell' and was applied by east coastal tribes to a tube-shaped purple or white bead made from clam or conch shell. These beads were extremely difficult to make before metal tools were available, and were treasured by the Indians as ornaments. The Dutch colonists in New York needed something to serve for small change and arbitrarily decided to use wampum for this purpose, with the result that for a few decades in the early 1600's it served for money among Europeans and Indians along the Atlantic coast. Later the wampum beads were used by the Iroquois and other eastern tribes in the celebrated wampum belts; and still later they spread to the Mississippi Valley tribes to be used for earrings, necklaces and the like. Practically all of these beads were made by Indians or Whites with metal tools introduced from Europe.

The wheel- or disk-shaped beads of shell, other beads made by Indians, and the glass beads imported from Europe for use in beadwork are never correctly called wampum; and except for a few California tribes no Indians used shell beads for money in our sense.

Wampum, then, is a term only applied correctly to the slender tube-shaped purple, white, or mixed purple and white shell beads made and used as indicated above.

Compiled by F. H. Douglas from the following and many other sources:

BUREAU OF AMERICAN ETHNOLOGY

1. Handbook of American Indians, 2 volumes. Bulletin 30, 1907-10.

BUREAU OF THE CENSUS AND BUREAU OF INDIAN AFFAIRS

2. Reports over many years.

DENVER ART MUSEUM

3. Indian Leaflet 51-52. Indian Linguistic Stocks or Families.
4. Indian Leaflet 61. Symbolism in Indian Art and the difficulties of its interpretation.
5. Indian Leaflet 110. War Bonnets.
6. Indian Leaflet 79-80. Totem Poles.

MILWAUKEE PUBLIC MUSEUM

7. The Building of a Chippewa Indian Birch-Bark Canoe—R. E. Ritzenthaler. Bulletin 19;2, 1950.

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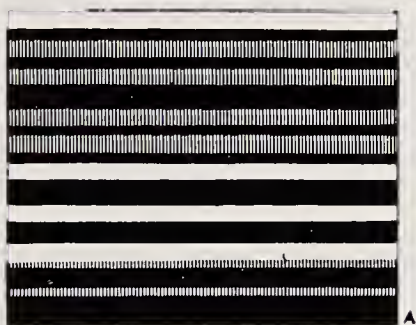
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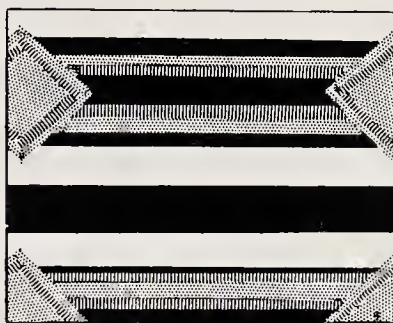
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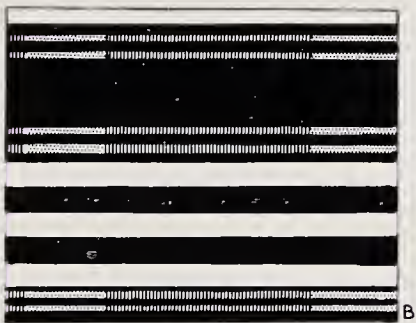
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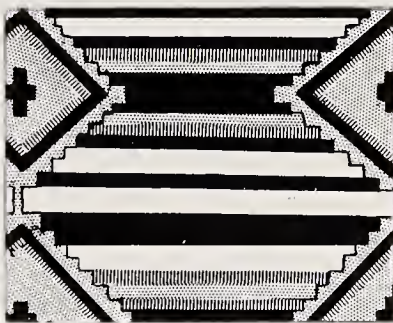
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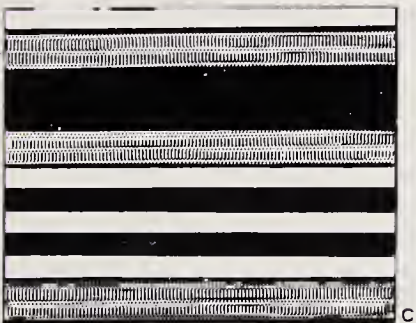
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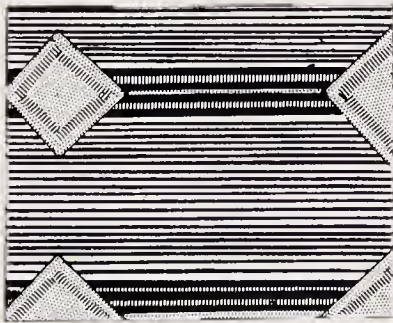
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NAVAHO WEAVING BLANKETS

LEAFLET 113

DECEMBER, 1951
3rd Printing, June 1957

1. INTRODUCTORY. This leaflet is concerned with the wool shawls or blankets woven specifically for men and women and worn by them until toward the end of the 1800's. Except for size and differing stripe width the two were identical in pattern and went through the same series of design changes.

The man's blanket is well known under the very misleading term "Chief blanket," misleading because under native conditions the tribe did not have chiefs in the usual sense, and because these blankets were not restricted to tribal leaders. Any man who could afford one might wear one of these man's blankets.

The woman's blanket is not so well known and is often not recognized for what it is.

2. THE NAVAHO INDIANS live on a large reservation in northeast Arizona and running over into adjoining parts of New Mexico and Utah. The tribe now numbers about 70,000 and is the largest in the United States. It is steadily increasing. See Leaflets 55, 59-60, 86, 89, 92-93 and 94-95 for additional information.

3. NAVAHO WEAVING began about 1700 when the tribe, then living in northwest New Mexico, was thrown into close contact with Pueblo Indians—master weavers for centuries—fleeing from the Pueblo rebellion of 1680-92 against the Spanish. 1709 is the earliest reference to Navaho weaving in Spanish records, though there are detailed earlier references to the tribe and its other activities. The tribe came to be the most productive of all Indian weavers north of Mexico. The loom and all the technics connected with spinning, weaving, etc. are Pueblo in origin, as well as some types of textiles; but the Navaho developed many blanket and rug types of their own. See Leaflet 59-60 for more facts.

BASIC FEATURES

4. SIZES. The man's blanket averages about 50 by 70 inches in size; and the woman's about 45 by 60. These are averages, for both larger and smaller sizes were made.

5. COLORS. Black, white and blue were the rule in the oldest types of man's blankets. In the standard fully developed types red was added for the designs. Other colors, mostly green and orange, appeared occasionally.

In the woman's shawl white is said to have once been used with the black, blue and red, but gray has long been substituted for the white.

6. MATERIALS. All of the types of wool used in other Navaho weaving are found: hand-spun native wool, various types of threads raveled from commercial cloth (English bayeta, bed blankets, American flannel); and several sorts of commercial machine-spun yarn, depending on the period when any given example was made. See Leaflet 116 for more facts.

7. QUALITY OF WEAVING is usually very high, especially in the men's blankets. In the best examples stitch counts for the weft (the threads you see when looking at a blanket) will run consistently in the 70's or higher to the inch, while the warp (hidden foundation threads) will average 20 to the inch. Spinning is fine and even, the blankets are thin, and all details of workmanship are carefully carried out.

Women's shawls are consistently coarser than men's blankets. The wool is spun less fine so that the shawls are thicker and less tight in weave. Care in weaving is also less likely to be evident. This seems curious since both types were woven by women. Men never wove among the Navaho, though in the Pueblo tribes men were the weavers and embroiderers.

8. LAYOUT OF DESIGN. These blankets differ from all others made by the Navaho in that the stripes run the length instead of the width. This means that the warps (hidden foundation threads) run across the width, while in all other types they run lengthwise.

DESIGN DEVELOPMENT

9. HISTORY. In general the simplest designs are the oldest and the most complex ones the latest. But this does not mean that design development proceeded in a rigid sequence of increasingly elaborate designs.

Therefore the notes which follow only indicate the steps from design simplicity to complexity, with only an approximate relation to the passage of time.

Cover designs show slightly more than one-half of the lower right hand section of each example.

10. FIRST PHASE. (A) The design is basically a set of broad alternating black and white parallel stripes of uniform width divided into two sections by a broader black band in the center and bounded on each long edge with another broader band. In these three wide bands are set narrow stripes, usually two, of deep rich blue made with indigo dye.

When this type of man's blanket began is not known but the style was fully developed by the early 1850's—shown by dated specimens—which strongly indicates a beginning a number of years earlier.

11. SECOND PHASE. (B) This differs from the first in having small units of narrow red bands introduced in pairs—with varying detail—near the corners and at both ends and center of the blue and black mid-stripe. This set of small red units is the germ of the "9-spot" design of the full-blown "chief blanket," the well known center square and surrounding parts of squares. The red units are either some raveled material or the slender, silky 3-ply commercial yarn called Saxony.

The first dated examples of this type were collected in the 1850's and nothing can be said about its origins.

12. THIRD PHASE. (C) The identifying feature of this phase is the substitution of red center and edge stripes for the small red units of phase two. There may be a single broad stripe or a group of several narrower ones. Sometimes a design in blue, such as a meander or fret, may be included in the red bands.

In the matters of history and materials what has been said about the first two phases can only be repeated.

13. FOURTH PHASE. (D) This is the classic "Chief blanket." On its broad black and white stripes appear a central square, quarter squares in the blanket corners, and half squares on the centers of the edges, all in red and all set diagonally to the blanket edges. It is supposed that the design was made so that, by folding, the various parts of squares would repeat the central unit. However, there does not seem to be any factual basis for this theory.

In these fully developed "chief blankets" Navaho weaving reached one of its peaks of fine perfection, good color taste and effective beauty of design. The type appears to have been at least somewhat new about 1850, and to have become the standard a decade or so later.

14. FIFTH PHASE. (E) After a peak period from about 1850-80 "chief blankets" began to change. Aniline dyes and commercial yarns came to the Navaho in 1875-80 and the Santa Fe railroad entered their territory in 1880-81, bringing as a consequence a flood of machine-made cloth—and the first large groups of tourists who wanted heavy floor rugs, not light wearing blankets.

Out of this combination of circumstances came a type of textile which kept the old basic striped layout of the "chief blanket" but developed elaborations of the 9-spot red designs; and was a rug, not a blanket.

The old classic red areas sometimes increased to meet and greatly reduce the striped area; or the 9-spots became squares or large crosses frequently bearing all sorts of small design elements. Coarse weaving supplanted fine, and chemically (aniline) dyed Germantown yarns tended to drive out the old simple colors, and the hand-spun or raveled threads.

15. WOMAN'S SHAWLS. (F), followed exactly the same course of development as that described for the "chief blankets," but are radically different because of having narrow black and gray stripes. The black and white striped type mentioned in reference 2 seems not to be known in any collection; and only three examples of the first phase type (with gray replacing white) have been found. All other types exist in some quantity. Adoption of the woman's shawl design and layout by the rug industry was much less common than that of the man's blanket.

16. CHILDREN'S BLANKETS were definitely made as smaller replicas of the two adult types, apparently much more commonly for girls than boys. There is one first phase boy's blanket in the Denver Art Museum and occasional examples of other phases for boys are known. Shawls for girls are, on the other hand, relatively common.

17. SYMBOLISM. The designs in men's and women's blankets are not symbolic, that is they do not stand for ideas or things.

Compiled by F. H. Douglas from examination of the great collections, and the following sources:

UNIVERSITY OF NEW MEXICO PRESS

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A. C. McCLURG AND COMPANY

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DEPARTMENT OF INDIAN ART

RICHARD G. CONN, CURATOR

FREDERIC H. DOUGLAS, EDITOR



RED-DARK-LIGHT IN DESIGNS

1. INTRODUCTORY. This leaflet is concerned with the most important evidences of a combination of colors very widely distributed through the field of Indian art. The term "red-dark-light" is used rather than "red-black-white" because blue or brown are often substituted for black; and cream or pale yellow for white. "Red" is somewhat inaccurate because the shade ranges from dull orange-brown to almost scarlet, but the term is used because a satisfactory substitute is lacking.

Red-dark and red-light combinations are related to the triple combination, but dark-light is too common to be considered.

2. DISTRIBUTION. The color combination is—or once was—found in 3 distinct areas in the United States: 1, from the Rockies east to the Atlantic; 2, the Southwest; 3, the West Coast States. Practically all of Canada except the Eskimo-Pacific Coast areas should possibly be included with Area 1; and the Pacific Coastal regions of British Columbia and Southeast Alaska belong with Area 3. The interior of Alaska uses the combination, apparently in relation to Area 1.

AREA 1: THE ROCKIES TO THE ATLANTIC

3. GREAT LAKES TO ATLANTIC: QUILLWORK. From unknown beginnings up to about 1825 the most commonly recognized aspect of the color combination appeared in porcupine quill embroidery (A). Deer skin was decorated by areas of quillwork with the natural light color as a background for designs in brownish-black and red-orange. The designs are either simple blocky figures of animals, or of bird forms upright as though standing on their tails, with wings partially outstretched like arms (these last are the thunderbirds so common in Indian myths of Canada and the northern United States); or small geometric figures such as triangles, oblongs or squares, or combinations of straight lines or bands in alternating colors.

Work of this sort, now very rare, seems to have been done mainly by the Eastern Sioux (just west of the Great Lakes), tribes around the Great Lakes, the Iroquois, and the Delaware-Shawnee group. Its presence is always an indication of considerable antiquity. Quilled cradles of the Wyoming Arapaho and pipe stems from the central and northern Plains indicate that at one time the color combination spread to the Rockies.

4. GREAT LAKES TO ATLANTIC: PAINTING. Accounts of early travelers, and some specimens of the 1700's and early 1800's, indicate that in this area there was once a type of decorating skin articles with fine-line painted patterns in the red-dark-light combination. The style may have extended well west of the Great Lakes.

The style survived till about 1900 or slightly later among the Naskapi of Labrador. This tribe made clothing and many other kinds of equipment (B) from caribou skin and painted them with line designs. After the coming of White traders the original dark brown was replaced by a commercial blue paint. Reference 7 describes a Naskapi painted coat in detail.

5. CENTRAL AND NORTHERN PLAINS: PAINTING. In this region the painting of buffalo hide skin clothing and other objects with geometric designs lasted up till about 1880 (C). The style is obviously a western extension of that noted in paragraph 4 because of the many closely related patterns. A bag from the area, in a French collection, is dated 1724 and shows the styles and color

combinations fully developed. As among the Naskapi, blue has long been used for the dark color.

On the southern Plains painting on skin seems not to have been done to any extent, but this apparent condition may be due to lack of early specimens or records.

Robes collected in the 1700's in the central Mississippi Valley and now in Europe indicate the painting of skin in the 3 colors was done in that region. A few prints of the same period show something of the sort from the lower Mississippi Valley.

6. SOUTHEASTERN BASKETRY. In the southern states, from the Mississippi to the Atlantic, basketry was largely made of plaited split wild cane. This light colored glossy material takes dye well and red and dark brown were the standard colors (F). An enormous variety of elaborate geometric designs in the red-dark-light combination appear on baskets from many southern tribes. Even today at least 2 tribes, the Chitimacha of Louisiana and the Cherokee of North Carolina, make considerable basketry in this style.

7. DISCUSSION. Though the huge area east of the Rockies once held a large variety of tribes, differing in many details of their ways of living, certain major factors to some extent bound them together to something like a common heritage. In the forested sections the tribes were affected by a common environment, and the lack of natural barriers really difficult to cross allowed wide spreading of ideas and customs. In the North the tribes mostly spoke dialects of the basic Algonkian tongue. The Iroquois of New York and thereabouts came originally from the South, as did many of the Plains tribes. The northern Plains were also in considerable part peopled by tribes moving in from the East.

In view of these factors it is not surprising that the red-dark-light color combination was well nigh universal in the Plains-Eastern Woodland region. The evidence, such as it is, suggests that the color combination developed in the South and spread everywhere from there. But the existence of coloring materials pretty much everywhere makes this by no means certain.

AREA 2: THE SOUTHWEST

8. POTTERY. For 1000 years or more the red-dark-light color combination has been common in the Southwest on pottery of the Pueblo peoples, with either red and dark on light or dark and light on red as the main combinations. Many prehistoric wares show these combinations and today either or both are found—or were until recently—at San Ildefonso (D), Santo Domingo, Tsia, Santa Ana, Laguna, Acoma, Zuni (E) and among the Hopi.

9. BASKETRY. The color combination is not common on southwestern baskets and is confined almost entirely to occasional products of the Arizona Apache and the Yavapai. The Pima very rarely added red painted designs to their woven light and dark ones.

10. WEAVING. Red, white and blue, sometimes black, were the standard colors for Navaho weaving in its greatest days (mid-1800's) and to a considerable extent since then. But this art is so recent and so much affected by materials from the White man that it is not really indicative of native ideas. The much older and aboriginal weaving of the Pueblo groups does not favor the combination more than slightly.

11. DISCUSSION. The Southwest is almost entirely set apart from the Indians to the East. Its ancient links are south into Mexico and north. Because its

chief use of the red-dark-light color combination—almost to the exclusion of other appearances—is on pottery, and since there are indications of perhaps a partially common basis for Mexican and some Pueblo pottery it would seem that the feeling expressed in paragraph 7 about a southern origin for the custom may receive support in the Southwest. Certainly the southwestern use of the color combination did not come from the Plains or East.

AREA 3: PACIFIC AREA

12. BASKETRY. Basketry is the great art of this region and the red-dark-light combination is common everywhere in it, though in southwestern California the red is really a light brown which hardly justifies the term "red." But in both central and north California (G and H) and in Washington and southwest British Columbia the color combination is extensively used. Almost always there are red and dark combinations on a light background. The same is true of the Klikitat type baskets of interior Washington, but in coastal Washington and British Columbia the combination occurs in the form of red-dark-light designs on a brown background.

13. NORTHWEST COAST: PAINTING. Before modern commercial paints in many colors came into use the wood carvings, and paintings on flat wood surfaces, for which this region is celebrated used red, black or blue, and light colors almost exclusively, the red and dark shades being the most common by far.

14. NORTHWEST COAST & INTERIOR ALASKA. Porcupine quill embroidery and, later, beadwork were done with the red-dark-light combination with little exception.

15. DISCUSSION. The area from the Rockies west to the Pacific is as distinct a one as the Southwest, though the two once had some slight trade linkage. Area 1, discussed in the first paragraphs of this leaflet, is entirely out of the picture. Even more than the Southwest the Far West is an independent area, so that its use of the red-dark-light combination must apparently be thought of as a local development due to the presence of naturally colored basketry materials.

As was said earlier, the presence of the combination in the interior of Alaska might be the result of ancient basic connections with Area 1, but this possibility is little more than speculation.

Compiled by F. H. Douglas from examination of the great collections. The subject is not treated in the literature but the following references are pertinent:

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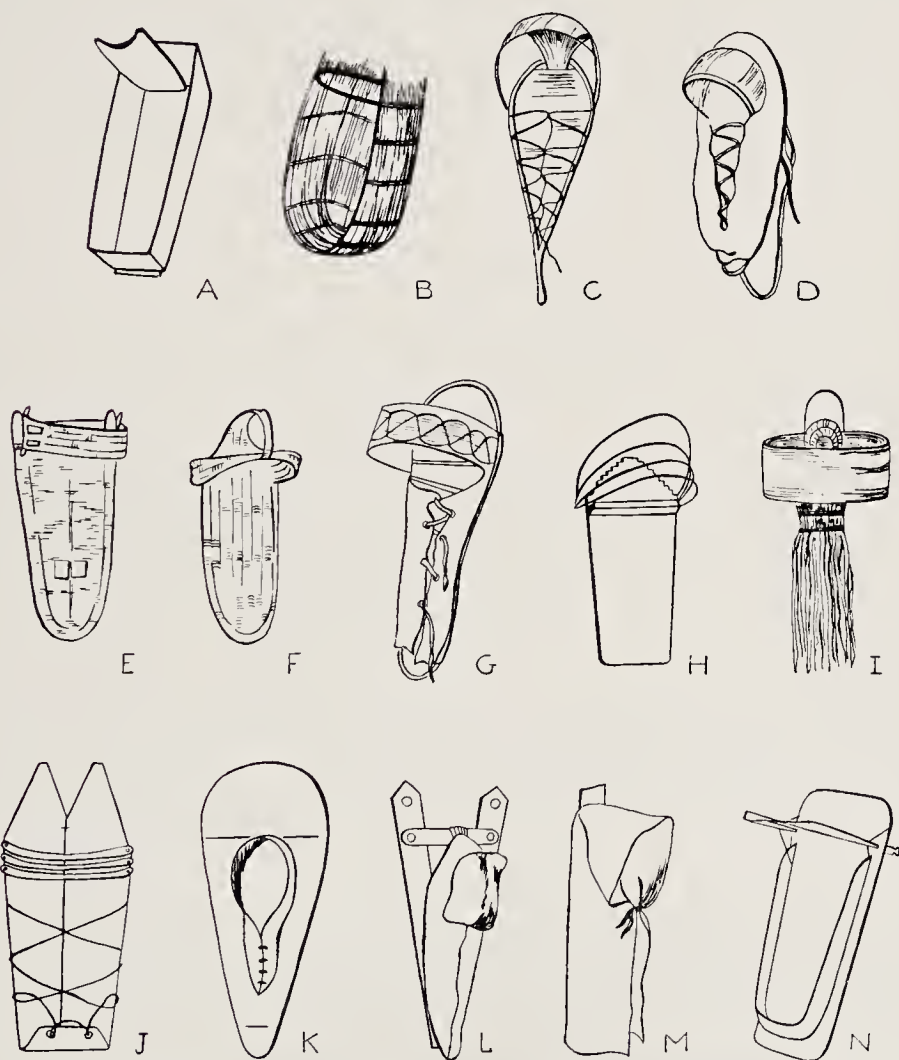
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DEPARTMENT OF INDIAN ART

RICHARD G. CONN, CURATOR

FREDERIC H. DOUGLAS, EDITOR



MAIN TYPES OF INDIAN CRADLES

1. INTRODUCTION. This leaflet is concerned with the various major types of carriers used by Indians north of Mexico for the restraint and transportation of babies. The employment of such a device was universal except possibly in the Southeastern United States. The descriptions are of types used in the 19th century. Some of these exist today; and others were used long before. The text makes no attempt to describe all tribal types for space only permits a broad regional discussion. Nor are methods of holding the baby in the cradle discussed. All are variants of thong cross-ties, band wrappings and the like.

2. CRADLE appears to be the best name for these devices. Baby-board, baby-carrier, papoose-board are frequently used, among other terms, but "cradle" has the merit of shortness and is therefore preferred.

3. INDIAN NAMES for cradles are different in each of the scores of Indian languages. There is a widespread popular idea that one Indian word is in general usage. Every museum worker or specialist in Indian lore is familiar with the question about this mysterious word, mysterious because no trace of it ever appears. It is like the Hindu rope trick in that everyone has a friend who is said to know the word or to have seen the trick, though the questioner has no personal eye or ear witness knowledge himself.

Reference 6 is an extensive compilation of words for cradle from dozens of tribes. Let readers take their pick!

4. ARRANGEMENT OF TEXT. The cradle types are discussed by geographical areas, beginning in the Northwest, passing down the Pacific Coast and then moving to the Atlantic.

5. NORTHWEST COAST. (British Columbia Coast.) The cradle is made of rather thin light cedar boards in somewhat the shape of a coffin. The bottom and four sides are separate pieces. Forehead flattening was once the custom in this area, so these cradles have an additional piece slanting out from the bottom of the cradle at its upper end. This was bound on the infant's forehead (A). Wool from the mountain goat, and shredded cedar bark provided padding in the cradle.

6. SALISH. (South Interior of British Columbia.) A basket cradle is used by tribes in this region. It is made in a coiled technic, with broad flat coils usually trimmed on the outside with the decorative method called imbrication. (See Leaflet 58.) The cradle, again, is coffin shaped, but the sides curve out somewhat from head to shoulders and back toward the feet.

7. CHINOOK. (Lower Columbia River.) This extremely rare cradle type is made by hollowing out a block of cedar wood into a shape and size suitable to hold an infant; and at the same time carving the upper end into a D-shaped handle. This Chinook type has an attachment for flattening the head like that described in Section 5.

8. WEST OF THE ROCKIES, except as indicated in Sections 5, 7 and 10, the many cradle types are made of basketry in coarse wicker or twined technics. In northern California these are somewhat ovoid shallow baskets in which the baby sits with its feet hanging over the bottom edge (B). Elsewhere the basic pattern is a flat oblong with varying sorts of marquee-like eyeshades projecting forward near the top. The bodies of the cradles are made of reeds or withes running vertically, horizontally

or in both directions. Some have frames either oblong, ovoid (D), Y-shaped or in the form of a snowshoe (C). Page 316 of reference 3 and page 538 of reference 5 show the distribution of the various types. Space does not permit even brief discussion here. In Nevada and Utah the basket frame is often very simple, hardly more than a slim rod bent into a long narrow U held by a few cross pieces, with the whole framework covered with a soft deer skin wrapping.

The Arapaho of Wyoming, properly in another area, use a variant of this skin-covered U-shaped frame. It is handsomely decorated with a large disk of porcupine quill work on the fold above the baby's head; and to tie the child in place a ladder-like band of quilled rawhide is used. Red or orange, black and white are the colors used.

9. PLATEAU. (Idaho, Eastern Washington & Oregon.) See Section 13.

10. SOUTHWEST: BASKET TYPE. Variants of the basket cradle type discussed in Section 8 are used by the Southwestern tribes except for the Pueblo groups (exclusive of the Hopi) and the Navaho. The general pattern of the Southwestern basket cradle is a U-shaped frame filled in with coarse basketry, and with a broad flat basketry band curving out from the frame in front of the child's head (E). Some Apache groups cover the frame with skin. The Hopi basket cradle is related, but differs in that its back and curving band eye shade are linked by another band curving over the child's head from the back to the center of the eye shade. The whole cradle is one piece of wicker basketry, usually brightly colored (F). The Mohave cradle has only the long U for a frame. It is padded with long strips of willow bark and has a very large horizontal basketry eye shade rounding out in front of the baby's head. Neighboring tribes (Pima, Yuma, etc.) use variants of this (I).

11. SOUTHWEST: SLAT TYPE. Some Apache bands use a cradle which has a U-shaped frame of heavy rods crossed by wooden slats an inch or two wide. The broad band curving out above the child's head is also made of slats, though narrower than on the back. The cradle may be covered with deer skin, often colored yellow (G).

12. SOUTHWEST: BOARD TYPES. These are four in number; general Pueblo, Pueblo hanging board, Taos and Navaho. The Pueblo people (except Hopi) use a flat board with an eye shade something like a folding awning frame (H). The top of the board is frequently carved into terraces symbolizing clouds. The second Pueblo type is simply a padded board hung horizontally by ropes from the ceiling.

The old Taos cradle was a shallow box of quite heavy hand-hewn boards.

The Navaho cradle (J) has a back of two narrow boards with pointed ends, a foot board and a forward curving eye shade of bent thin wood splints. All parts are tied to each other by thongs threaded through holes in the wood.

13. ROCKIES AND WESTERN PLAINS. (K). From the Colorado Ute north to the Blackfoot, Crow, Flathead and some adjoining tribes, and into eastern Washington, the cradle is a flat board cut into a long ellipsoid much wider at top than bottom, and curved at both ends. The board is covered with skin or cloth, usually beaded. The covering is tight over the large top section and made into a shallow bag to hold the child on the narrow lower $\frac{2}{3}$ of the board. The Ute usually add an eye

shade of coarse basketry. The Crow replace the bag with a series of fairly wide straps laced together down the front.

A variant used by a few tribes on the lower Columbia River has a triangular or oblong projection rising as a handle from the top of the board. The cradle looks something like a stone arrowhead.

14. PLAINS, CENTRAL AND SOUTHERN. Such tribes as Sioux, Cheyenne, Kiowa and Comanche use two cradle types. One has a deep, straight sided bag of skin, usually covered with beadwork, attached to a pair of narrow boards of which the pointed upper ends extend far beyond the top of the bag. The boards are held in place by cross pieces near the head and foot of the bag. The pointed upper ends are frequently trimmed with brass headed tacks (L).

The second type is, when flat, a triangular hood of beaded or quilled skin, sometimes cloth covered, to the base of which is sewn a large rectangle of skin or cloth. When the lower corners of the hood are pressed together it forms a head covering like a sun bonnet. The baby is laid on this and then the cloth bottom is folded around its body and legs (M).

15. PLAINS, SOUTHERN, RAWHIDE. The Comanche and perhaps other neighboring tribes use a rawhide night cradle. This is simply a rectangle of rawhide laced tightly around the baby. Such a cradle was often only a large cylinder of the type used to store and carry war bonnets and other ceremonial equipment.

16. NORTHEAST. (N). From the Great Lakes and Mississippi to the Atlantic and from the Mason & Dixon line to Canada the basic cradle was a flat board with an angled wood bow projecting forward from near the top, a small foot board and, usually, low sides of wood or bark on the lower $\frac{2}{3}$ of the board. Cloth or skin was attached to the sides of the board and laced over the infant.

17. SOUTHEAST. Information on southeastern cradles is extremely scant, and the great collections contain few if any specimens. Reference 4 deals with a few notations about cradles made by early explorers and these describe two types: a flat board of unspecified shape; and a contrivance of reeds, again not clearly described. The general impression is that children were carried to a great extent in folded blankets or skins. These tribes very early lost most of their native way of life because of strong white influence; so that at this late date any sort of a definite statement appears impossible.

Compiled by F. H. Douglas from examination of the great collections, and from the following references:

UNITED STATES NATIONAL MUSEUM

1. Cradles of the American Aborigines—Otis T. Mason. Annual Report for 1887, 1889.

UNIVERSITY OF PENNSYLVANIA

2. Indian Cradles—William C. Farabee. The Museum Journal 11; 4, 1920.

AMERICAN MUSEUM OF NATURAL HISTORY

3. Havasupai Ethnography—Leslie Spier. Anthropological Papers 29; 3, 1928.

BUREAU OF AMERICAN ETHNOLOGY

4. The Indians of the Southeastern United States—John R. Swanton. Bulletin 137, 1946.

5. Handbook of the Indians of California—Alfred L. Kroeber. Bulletin 78, 1925.

STATE HISTORICAL SOCIETY OF COLORADO

6. Indian Terms for the Cradle and the Cradleboard—Victor F. Lotrich. The Colorado Magazine 18; 3, 1941.

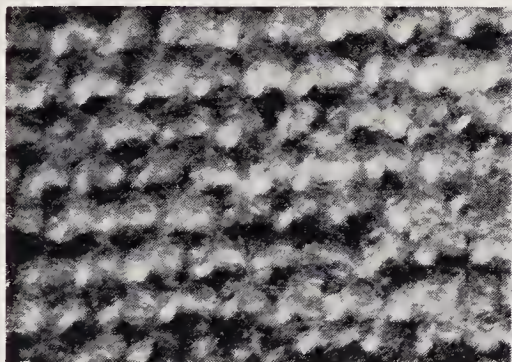
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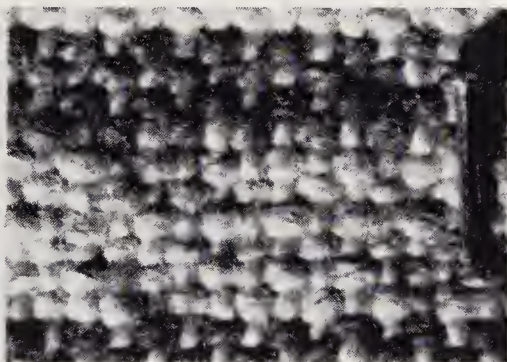
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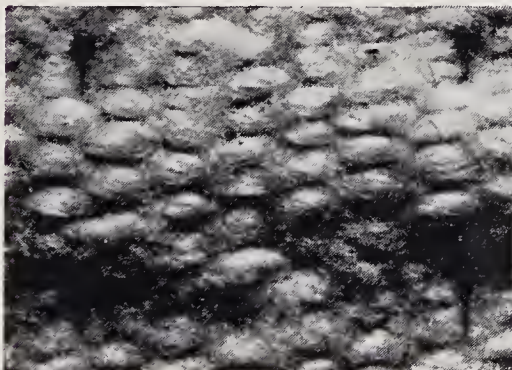
FREDERIC H. DOUGLAS, EDITOR



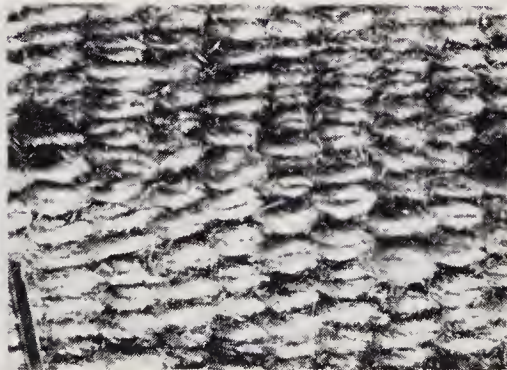
A. Cotton Hondspun



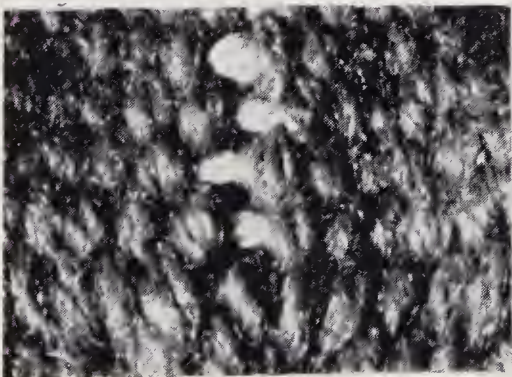
B. Cotton Sacking



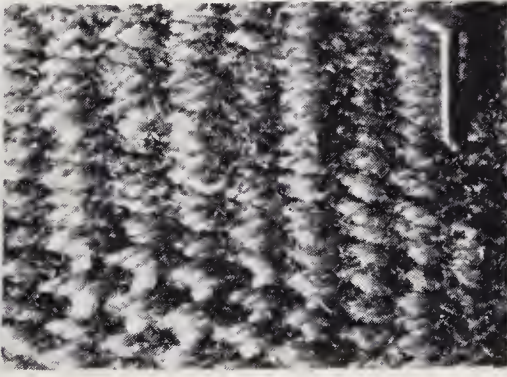
C. Wool Hondspun



D. Bayeto—2 Thread



E. Germantown. (Shows Selvage)



F. 3 Ply Saxony

SOUTHWESTERN WEAVING MATERIALS

1. INTRODUCTORY. This leaflet is about the various forms in which wool and cotton were used in weaving by the Pueblo and Navaho and by several Southern Arizona tribes, Pima, Papago, Maricopa, Yuma, Mohave and perhaps others. Other materials such as apocynum (Indian hemp) are not discussed.

Dated specimens indicate that the Pueblo people were weaving in cotton by the 700's A. D. At that time the Navaho were not in the Southwest. Information is lacking about the Southern Arizona tribes.

Wool-bearing sheep were introduced by the Spanish in the 1500's and by the early 1600's the Pueblos were using wool in weaving. The Navaho learned weaving from the Pueblos about 1700. They have used only wool (see section 3).

2. COTTON was brought into the Southwest from Mexico early in the Christian era. It has been cultivated by the Pueblos ever since, though very little is grown today. The species is *Gossypium* Hopi Lewton. The Pueblos have been weaving with it—though recently in greatly reduced quantities—for 1200 years. Leaflets 56, 89, 90, 91, 92-93 and 96-97 describe Pueblo cotton fabrics. The Southern Arizona tribes have not woven, except perhaps an occasional cradle band, for several generations.

Today the making of cotton thread for weaving is almost entirely restricted to the Hopi of Arizona. Men are the spinners, as well as the weavers, and produce the thread on a spindle. This is a slim rod, 12-18 inches long, over which is slipped a thin disk 3-5 inches in diameter, so that the disk rests about 3-4 inches from the butt of the rod. The spinning process is described in Leaflet 3.

The thread produced is single ply, fairly coarse, of even diameter and free from bumps. If spun for warp it is finer. (Figure A.)

Today commercial cotton batting is often spun instead of the locally grown wild product. Thread made from it is possibly whiter than that made from the wild cotton.

3. COTTON STRING of commercial manufacture has been used as a substitute for handspun thread for 50 years or more. It may be recognized by the regular corkscrew twist of its several plies. For a few years shortly before and after 1900 the Navaho used much cotton string for the warp in wool blankets. The Pueblos use it increasingly today in cotton fabrics for both the warp and weft or for the warp alone.

4. COTTON SACKING is not properly weaving material but it is mentioned here because it has been used by the Pueblos as a substitute for hand woven cotton cloth. The weave is identical (a basket weave showing both warp and weft) but the threads are finer and the weave evenner and tighter than that of handwork. Widely spaced rather narrow bands of color usually are present and make identification easy. (Figure B.)

WOOL

5. HANDSPUN thread for weaving is produced by both Pueblo and Navaho spinners. The spindle and process are identical. Women are the spinners among the Navaho, men among the Pueblos.

Handspun thread is always single ply. That is, it is made up of just one spun unit, not several twisted together or running more or less side by side.

See (Figure C) on the cover. It is overwhelmingly the most common form of weaving wool.

Pueblo handspun is on the average more coarse than Navaho, but it is much more even in diameter. The Pueblo custom of rubbing the thread as it is spun with a corn cob removes the small lumps and surface irregularities so often seen in Navaho handspun.

Among both groups wool for warp is spun a number of times to make it hard and fine.

6. BAYETA AND RAVELED THREADS are famous in Navaho weaving and were also used by the Pueblos in weaving or, more importantly, for embroidery. The term "bayeta" is the Spanish word for baize, a wool cloth made in England ever since the mid-1500's. It is made with fairly coarse 1-ply threads in a simple basket weave (warp and weft both visible) and was exported from England to all parts of the world. The Spanish took it to Mexico whence it spread to the Southwest. By at least the early 1800's Navaho women were raveling out the threads and weaving them into blankets. The Pueblos were doing the same to obtain embroidery threads.

Bayeta is usually red, but blue, green, yellow and white colors also exist and appear in blankets. The old story that the Indians obtained bayeta by raveling Spanish uniforms cannot be disproved, but the presence of the cloth in large bolts easily available at traders makes it unlikely that much uniform cloth was used. The Plains tribes and many others used bayeta in quantity though they did not ravel it as they were not weavers.

Other cloth raveled came from commercial bed blankets, red flannel underwear and a kind of imitation bayeta called American flannel, a rather fuzzy, sleazy material. These other ravelings can usually be recognized by the fineness of the threads as compared with the rather fat round threads of bayeta. Bayeta and other raveled threads can best be recognized by sight, not touch as once was thought. They are, with some exceptions, used in 2 or more plies which run sometime parallel (Figure D) and sometimes unevenly and irregularly twisted. Single large threads of real English bayeta seem to have been used sometimes. Somewhat tentatively it can be said that recognition of these threads depends upon their extreme size regularity, due to machine spinning, and the presence of white spots on the red threads. These spots are due to the fact that the cloth was dyed after weaving. The dye did not always penetrate so that when the cloth is raveled these undyed spots show. These spots are not, however, invariably present.

7. SAXONY YARN was imported to the Southwest from Saxony in Germany by at least 1850 and probably earlier. It is usually red and can be recognized by its notably silky sheen and the very even twisting of 3 fine plies. Blankets made entirely of Saxony are perhaps rarer than those of bayeta, but small stripes or pattern details of it are not infrequent in textiles of the mid-1800's. (Figure F.)

8. GERMANTOWN YARN. This commercially made weaving material reached the Southwest in the period of 1875-80 and in the next 25-30 years was used a great deal by the Navaho. It is usually 4-ply and has a rather dull look when compared with the silky sheen of Saxony. The 3-ply variety sometimes found is also larger and duller than Saxony.

The other great difference is in color. Saxony was dyed with natural dyes, almost always red. Germantown is dyed with aniline (chemical) dyes in a wide variety of bright harsh shades which often fade. The natural dyes, cochineal or madder red, indigo blue and others rarely seen do not fade. To detect fading make a tight fold of any yarn section and look into the spaces between the threads. If the yarn has faded the original colors will be seen.

In weaving, yarn often becomes untwisted so that the regular corkscrew twist tends to disappear (Figure E). But it usually maintains its twist along the edges of the fabric and should be examined there in doubtful cases (Figure E).

9. CARPET YARN. This is a coarse, 4-ply yarn notably harsh and wiry to the touch, which was used by the Navaho for a brief period around 1900. Only a few rugs seem to have been woven with it. Page 191 of reference 1 gives more facts about it.

10. WOOL STRIPS torn from bolt cloth were excessively rarely used by the Navaho. One recorded blanket is made entirely of this by the Navaho, and a few others show narrow bands. Recognition is simple because the strips, perhaps one-half inch wide, are clearly visible and resemble nothing else.

11. COMBINED MATERIALS. Pale colors, almost always various shades of pink, were made by carding together white native wool with red dyed wool. The separate white and red fibers can easily be seen with a magnifying glass. Without chemical analysis it is impossible to say whether these red fibers are from native dyed wool, commercial yarns or ravelings.

12. PROBLEMS. Now and then one sees red threads which give every appearance of being handspun in blankets which antedate aniline dyes. This suggests that the Navaho used imported cochineal themselves, or that the local trader dyed the wool for them. The authorities do not mention this practice, but there is this tentative evidence of it.

A blanket in the Denver Art Museum shows sections of material which appears by every standard to be Germantown, yet it is dyed blue with indigo. Germantown is supposedly always aniline dyed. Is this true, or was Germantown available in pre-aniline times?

These questions and others for which there is not space need answers which may be found in chemical analysis of dyes and microscopic study of wool fibers.

Compiled by F. H. Douglas from the examination of the great collections and from the following sources:

UNIVERSITY OF NEW MEXICO PRESS

1. Navajo Weaving; Its Technic and History—Charles A. Amsden, 2nd edition, 1949. Plate 65 is important.

A. C. McCLURG AND COMPANY

2. Indian Blankets and Their Makers—George W. James, 1920. Chapter 4 good for history and manufacture of bayeta in England.

LABORATORY OF ANTHROPOLOGY, SANTA FE

3. Navajo Textile Arts—H. P. Mera, 1948.

SAN VICENTE FOUNDATION, SANTA FE

4. Southwestern Textiles in the Barton Collection—H. P. Mera, 1949.

MUSEUM OF NORTHERN ARIZONA, FLAGSTAFF

5. The Arts and Crafts of the Hopi Indians—M-R. F. Colton. Museum Notes 11;1, 1933.

BUREAU OF AMERICAN ETHNOLOGY

6. The Pima Indians—Frank Russell. Annual Report for 1904-5, 1908. Pages 148-153 are concerned with weaving.

UNIVERSITY OF NEW MEXICO

7. Symposium on Prehistoric Agriculture, pp. 51-64, Bulletin 296, 1936.

The pins shown in the plates are 1 inch long and were used to give an idea of the original size of material. In some photos the weft has been pulled apart to show the material to a greater advantage.

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DEPARTMENT OF INDIAN ART

NORMAN FEDER, *Curator*

BEADWORK HISTORY AND TECHNICS

LEAFLET 117

Reprinted May, 1971

MAY, 1953

1. INTRODUCTORY. This leaflet discusses the historical and technical background of Indian beadwork north of Mexico. Brief descriptions of the main types of beadwork now or formerly done in the same region are in leaflet 118-119. For additional facts see leaflets 2, 73-74 and 120.

2. GLASS BEADS made in Venice, Italy, were brought to America by the earliest explorers, but for the first 150-175 years the beads were too large for use in sewn beadwork and only suitable for necklaces, other personal ornaments or stringing on fringes. In the East, somewhere about 1675, a bead small enough for sewing was introduced and beadwork began. This was the "pony" bead, about 3/32 inch in diameter and almost always blue or white, the presence of which indicates an early age for any specimen showing it. (But see the next paragraph at "Idaho".)

The pony bead moved slowly west and did not reach the Plains—at least in quantity—until about 1800. It was followed in about 1840 in the West and perhaps 1775 in the East by a very small bead in many colors and often faceted. This tiny "cut" bead and the "pony" bead continued together until the appearance about 1855 in the West and 1800 in the East of the "seed" bead, a size between "cut" and "pony" and the standard ever since. The "pony" bead then disappeared, except in Idaho, northwest Montana and eastern Washington, but the "cut" bead continued, though always in the minority, until today. About 1885 Czecho-Slovakian beads began replacing those from Venice and come to be the leading type. Some Japanese beads were used after World War I. Glass beads have not been made in the U. S. except very briefly in the early 1600's at Jamestown, Virginia.

3. TECHNICS. There are two main methods of making sewn beadwork. The "lazy" stitch is that of the central and southern Plains. It has a ridged or corrugated surface and is easily recognized. The "spot" or "overlay" stitch has a perfectly smooth surface and is the technic of the northern United States and adjoining parts of Canada. For details of these stitches see leaflet 73-74. Woven beadwork (except possibly for wampum belts, see leaflet 31) began in the late 1700's and is done either with a needle alone or on a type of small loom introduced from Europe. The Great Lakes-Mississippi Valley region is its main source. Bead netting done with needle and thread is limited to the western Southwest, the Basin up to Idaho, the Comanche of Oklahoma and the Eskimo.

4. GEOGRAPHY. Beadwork is overwhelmingly an art of the northern half of the United States and of Canada. Its existence in the southern United States from coast to coast is very limited and spotty.

5. DERIVATION. Beadwork is the child of a wedding between porcupine quillwork and European commercial glass beads. Quillwork is an ancient Indian art done with many technics (See leaflet 103) and has the same basic distribution as beadwork (Canada and the northern half of the United States) with much less use—almost non-existent—in the southern section even than beadwork. The "lazy" stitch in beadwork is directly derived from the 2-thread sewn quillwork of the Plains. The "spot" stitch comes basically from the 1-thread sewn quillwork of the Great Lakes and northeastern areas but work

done with it has frequently been modified by the addition of an all-over background of beads in one color. This one-color background is not found with 1-thread sewn quillwork.

6. DESIGN HISTORY. In pre-beadwork times there was a solid belt of angular geometric design in sewn quillwork stretching across the northern half of the United States from the Atlantic to the Rockies and extending far north into Canada, where, also, woven work was done. In the West the designs were solid figures while in the Great Lakes and Northeast linear designs dominated. There was then little or no difference in tribal styles, though regional ones existed. In this sea of angular design there appears to have been an island of curvilinear art, that of the Iroquois of New York and adjoining regions. There may have been another one of rudimentary curving designs in New England, Quebec and thereabouts (See reference 6). As has been said, quillwork did not exist in either the Southeast or Southwest except in a few tiny instances.

Into this scene of aboriginal art there were introduced by Europeans (largely French) two types of curvilinear design, the double-curve and the floral. The double-curve has for a base a line curving up at both ends to form a more or less oval shape lying on one long side and with a break on the upper side. The floral style takes leaves, vines and flowers for its subject with varying degrees of realism.

The double-curve in a thousand elaborate variations reached its fullest development in New England and Quebec. The floral style centered further west around the Great Lakes. The floral style was also brought to a slight extent to the Southeast, though somewhat later than the Northeast.

These introduced styles tended to supplant the native angular designs; and to merge with the curvilinear ones. As is often the case the mingling of the native and foreign produced a rich and varied repertory of design in which the two sources were inextricably mixed.

7. WESTWARD MOVEMENT. The floral style, firmly established around the Great Lakes, began to move west as the large fur trading companies sought new territories. Eastern Indians—Iroquois, Ojibwa, Ottawa, Cree and the like—were employed as guides or trappers and seem to have carried the floral styles westward. By 1800 there seems to have been floral beadwork on the eastern Plains at least, though the few dated western Plains specimens of this show none. (Lewis and Clark). Forced removal of many Great Lakes and Eastern tribes to Oklahoma in the mid-1800's carried the floral style to the southeastern Plains.

In the post Civil War period the surveying and building of the trans-continental railroads gave a big push to the western spread of the floral style. By 1870 the Montana Blackfoot were using it, and by 1880 it had reached the Southeast Alaskan Tlinkit. Even earlier—late 1840's—it had reached the Yukon and interior Alaska. The movement was mostly deflected south by the Rockies to reach the Shoshone and Ute but it also affected eastern Washington tribes. Since the style reached the West it has steadily continued to displace the older geometric designs.

8.—ORIENTAL RUG STYLES. While the flower designs were pushing west across the northern Plains another factor was greatly influencing the central Plains tribes, especially the Sioux. This great tribe lay directly across the emigrant trails over which traveled, after the Civil War, families wealthy enough to own oriental rugs from the Caucasus. This was the popular oriental rug of the period. Designs from such rugs were eagerly copied by Sioux beadworkers, commonly with little or no change. Again, the introduced style drove out the native so that these rug designs have long been standard for the Sioux and some of their neighbors. (See reference 3).

9. TRIBAL STYLES. On the Plains till about 1860 all beadwork looked very much alike. Knowledge of tribal distinctions which may have existed has now been lost. After about 1860 the tribal or at least regional styles in that area began. (See leaflet 73-74). Elsewhere tribal styles are so little differentiated that in general one can only distinguish the work of sub-areas such as Great Lakes or New England. Uncertain or improper identification of specimens in the great collections makes this task doubly difficult.

Text by F. H. Douglas based on examination of the great collections. The following references are useful:

1. Beads and Beadwork of the American Indians—W. C. Orchard. Contributions 11, Museum of the American Indian, New York, 1929.
2. The technique of porcupine-quill decoration among the North American Indians—W. C. Orchard. Contributions 4;1, Museum of the American Indian, New York, 1916.
3. Quill and beadwork of the Western Sioux—Carrie A. Lyford. Indian Handicraft Pamphlet 1, U. S. Office of Indian Affairs, 1940.
4. Ethnology of the Gros Ventre—A. L. Kroeber. Anthropological Papers, 1;4, American Museum of Natural History, New York, 1908..
5. Decorative designs of the Ojibwa of Northern Minnesota—Sister Bernard Coleman. Anthropological Series, 12, Catholic University of America, Washington, 1947.
6. The double-curve motive in northeastern Algonkian art—F. C. Speck. Memoir 42, Geological Survey of Canada, 1914.

Thanks are due to Arthur Woodward, Los Angeles County Museum, for assistance in preparing this leaflet.

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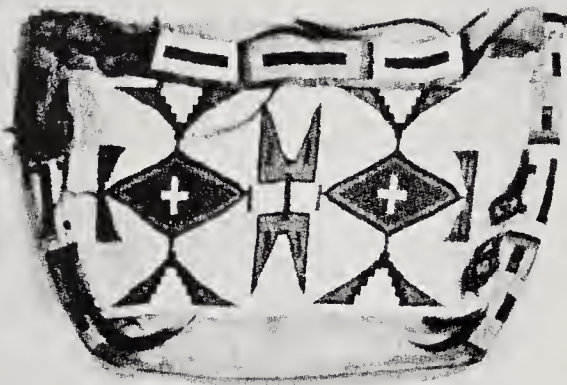
NORMAN FEDER, *Curator*



MAIN TYPES OF SEWN BEADWORK

LEAFLET 118-119

MAY, 1953



16

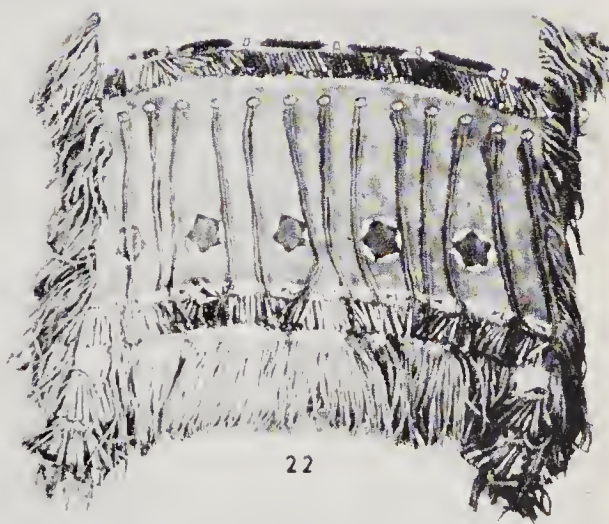
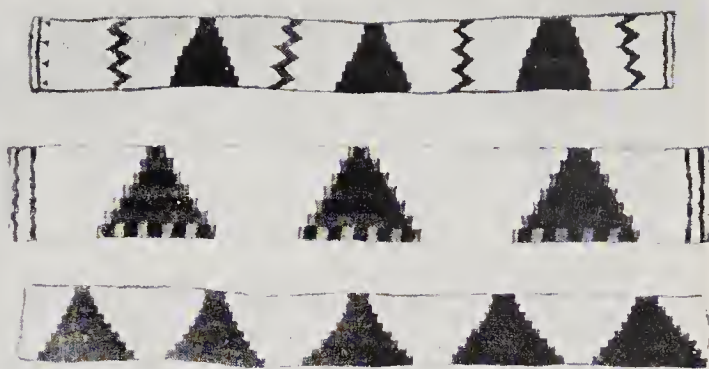
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17



18



1. INTRODUCTORY. This leaflet describes the main types of sewn beadwork done by the Indians of the United States. Leaflet 117 gives more information about the historical background of the art. See also leaflets 73-74 and 120 for additional facts.

2. BACKGROUND SUMMARY. Beadwork began about 1675 in the East and 1800 in the West. It is limited to the northern half of the United States and much of Canada, with a few slight exceptions in the Southeast, Southern Plains and Southwest. The major area is that of aboriginal porcupine quillwork, and beadwork was greatly influenced in technic and design by the older art. All beads used in beadwork are of commercial glass imported from Europe except for some of Japanese make after World War I.

In the main area the designs were angular geometric except for 2 areas of curving design in the Northeast. Two types of patterns were introduced from Europe, the double-curve and floral, and these spread widely from coast to coast through influence of the fur trade, trans-continental highways and railroads, and government removal of tribes. Oriental rug designs affected Sioux beadwork in the 1860's and have been used ever since.

Background for the Southern type is given under the pertinent sections to follow.

3. BEAD AND STITCH TYPES. "Pony" type: coarse beads about 3/32 inch in diameter and usually white or blue. "Cut" type, tiny beads with facets (sometimes not) in many colors. "Seed" type, the ordinary bead used today. In size between the other two and in all colors. - (See Leaflet 73-74).

There were two stitch types; "spot" or "overlay" which produced a smooth surface; and "lazy" which produced a ridged or coarsely corrugated surface.

NORTHEAST

4. NEW ENGLAND. Line patterns, almost always in white beads and without background, are the rule here. The designs are variants of the double curve in endless degrees of complexity (1). Practically all surviving work is on cloth, black, red or dark blue. Some work (2) was done in the later 1800's which shows crowded all-over floral designs producing a raised, en-crustured effect on cloth something like that of gold thread embroidery on court coats and the like. The main producers are Penobscot and Passamaquoddy.

5. IROQUOIS. White beaded lines in delicately curving lacy patterns characterize this work (3). It appears on fine black, dark blue or scarlet cloth. There are no backgrounds. The design elements are small and less complex than those of New England. A later type of the mid to late 1800's is completely different, with coarse, raised floral designs in large "pony" beads (4). The effect is bad mid-Victorian and the work was done for the Niagara Falls tourist trade. A variant of this (5) uses small beads sewn flat. Usually each leaf or fruit has two shades of one color.

6. GREAT LAKES: OLD STYLE. White bead patterns in straight or angling lines arranged to make long narrow bands—often several parallel—of zig-zags, diamonds, lozenges, chain effects and the like without background (6). The very scant use of curves is notable. Rarely colors other than white were used.

This style began early, perhaps by 1700, and lasted in force until the flower designs became important in the mid-1800's. The old designs are still sometimes used for borders. For tribes see the following section. A variant (7) produced solid all over work using the same sorts of simple line designs.

7. GREAT LAKES: FLORAL. Large, complex and many-colored plant and flower designs on a white background mark this style (8). Other background colors are rarely used. The technic is the "spot" stitch which produces a smooth mosaic-like effect. The design layout is very curving and often somewhat asymmetrical. The degree of realism varies from extreme to slight. Combinations such as oranges or grapes on plants with maple or ivy leaves occur. This style began somewhere in the mid-1800's, or somewhat earlier, was at its height in the 1880's and 1890's, and still is done to a slight extent. Ojibwa, Eastern Sioux, Menomini, Sauk, Fox, Potawatomi and Winnebago all produced variants of this style, but the Ojibwa are the main producers.

A simpler variant is found in older Ojibwa and Eastern Sioux work (9). This has the flower designs on black velvet but without background. This work is finer in detail and less "streamlined" than the other.

SOUTHEAST

8. SCROLL STYLE. 45 to 50 belts (10) and pouches survive which show a kind of beadwork done in the Southeast in a period about 1800-1860, perhaps longer at each end. These designs, done with white "pony" beads, are adaptations of the scroll designs engraved on the ancient pottery of the Southeast. This is apparently the only type of beadwork design not derived from quill-work or European influences.

9. FLORAL STYLE (11). On a few dozen small bags with shoulder straps surviving from the early 1800's a rather simple non-distinctive floral style is found. There is no background and details are very simplified. The style was entirely introduced from Europe in the late 1700's. The shape of the small square bags with very large V-shaped flaps indicates the type better than the beading. Another type has no flap, but the front lip of the opening about an inch lower than the back one. Most of the great southeastern tribes seem to have made these bags: Creek, Cherokee, Seminole and others.

10. DELAWARE-SHAWNEE FLORAL. Though not really southeastern this work is related and may be placed here. It may be recognized by a smooth colored background, usually divided into two darkish colors (often red and blue) on which appear very simplified leaf and flower forms, also frequently divided into 2 colors contrasting with the background (red on blue, etc.). Sometimes the background is omitted (12). This work is usually done with cut beads. (See section 3.)

PLAINS

11. SOUTHEASTERN FLORAL (13). Large staring plant and flower designs without background are standard for such Oklahoma tribes as Ponca, Omaha, Osage, Oto and Iowa. Like the northern "spot" stitch used, these designs came down from the Great Lakes as a result of government removals. The

style is basically simplified Great Lakes floral (section 9) without the backgrounds.

12. SOUTHERN (14). Typical of this region is the scantiness of beadwork. It is limited to narrow edging bands, small isolated rosettes and other simple units. The exceptions are Kiowa cradles and a few small bags completely covered with elaborate beading. These exceptions are a late development possibly due to contact with such central Plains tribes as Cheyenne and Arapaho who were moved into Oklahoma in the late 1800's.

13. CENTRAL (15). Large areas of beadwork in the ridged "lazy" stitch indicates this style. On backgrounds, usually but not always white, appear, in older work, simple squares, tall triangles, bands and the like. On later work the designs are rather "spidery," spread-out combinations of lines and simple geometric forms in many colors. The Sioux are the main producers but much Cheyenne, Arapaho and the Ute work is basically similar. (See paragraph 8, Leaflet 117, for history.)

14. NORTHERN: CROW STYLE. (16). Simple geometric forms, usually on solid backgrounds, done with the smooth "spot" stitch in rather pale colors (rose, blue, mauve, grey-green). White is hardly used except for outlining. Red wool cloth is frequently incorporated into the beadwork. The Crow and perhaps some neighbors (Shoshone, Bannock) once used this style, now largely abandoned in favor of floral designs.

15. NORTHERN: CHECKER BOARD STYLE. (17). Designs made up in considerable part of small repeated squares or oblongs mark this style. It is done with the "spot" stitch and used to cover large areas. The background is usually, but not always, white. This work is done by Blackfoot, Assiniboin, Sarcee and Plains Cree. This use of checker board designs should not be confused with that of the Mescalero Apache (see section 19).

16. NORTHERN: WAVY STRIPED STYLE. (18). On women's dresses of the older style once used by Blackfoot, Nez Perce, Flathead and various tribes of eastern Washington (Yakima, Umatilla, etc.) the combined bodice and sleeves are covered with long horizontal parallel stripes in two or more colors. The bands rise to a curve at the shoulder and fall to one at the breastbone. "Pony" beads lasted much longer in this region than elsewhere, up until the 1890's at least and possibly longer. Elsewhere they went out of use in the 1860's. (They were called "pony" beads because they were brought in on pack ponies).

17. NORTHERN: FLORAL STYLE. (19). Quite generally on the northern Plains appear several varieties of floral designs. These seem to be tribal variations but knowledge is too scant to permit a statement here. In general these designs tend to a somewhat rigid bilaterally symmetrical layout; and to a simplification and "streamlining" of the units, both details contrasting with the flowing, somewhat asymmetrical and realistic floral designs of the Great Lakes. Little white spurs or projections along plant stems are quite common. The "spot" stitch is used. One common type is Shoshone with plant forms done in coarse glittering translucent beads.

SOUTHWEST

18. JICARILLA APACHE. (20). These people were close to the Plains and the Utes (Rocky Mountains) and therefore made beadwork more than any other Southwestern group. They used the "lazy" stitch. Most generally seen are legging and man's shirt strips with big simple stepped truncated triangles usually in one color on a white ground. This is the basic style once general on the Plains (except southern). Women's capes had a variant of the northern wavy striped style (section 16), an indication of the north-south trade and influence route through the Rockies.

19. MESCALERO APACHE. (21). Beadwork was scant in this tribe and was limited to narrow edgings and the use of small single or repeated units. A checker board unit in several colors is the most distinctive design (see section 15). The units are isolated and there is no background. These people and the Western Apache (next section) used tin jinglers more than beads to decorate clothing. The Chiricahua Apache worked in about the same style (22).

20. WESTERN APACHE. (23). Beadwork of these bands was even scantier than that of the Mescalero. The checker board is lacking and only simple edgings or small units were used on clothing. Painting was preferred as a means of decorating skin clothing.

Black beads were much used by all Apache. Elsewhere this color is an indication of origin among Midwest or Plains tribes of the Algonkian language family.

ELSEWHERE

21. No other Southwestern people or no California tribes made sewn beadwork (excluding Indian school work and the inevitable chance exception), but see Leaflet 120 for Colorado River bead netting; north California woven beadwork; and other types of netting, weaving and use of beads in braided wool fabrics.

Text by F. H. Douglas based on examination of the great collections. The following references are useful:

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